DOCUMENT RESUME

ED 022 065 VT 006 926

MICROFICHE COLLECTION OF DOCUMENTS REPORTED IN ABSTRACTS OF RESEARCH AND RELATED MATERIALS IN VOCATIONAL AND TECHNICAL EDUCATION (ARM), FALL 1968.

Ohio State Univ., Columbus. Center for Vocational and Technical Education.

Pub Date 68

Note- 1,509p.

EDRS Price MF-$5.75 HC Not Available from EDRS.

Descriptors- CLEARINGHOUSES, *EDUCATIONAL RESEARCH, INDEXES (LOCATERS), RESOURCE MATERIALS, *TECHNICAL EDUCATION, *VOCATIONAL EDUCATION

Documents announced in the Fall 1968 issue of "Abstracts of Research and Related Materials in Vocational and Technical Education" (ARM) but not announced in "Research in Education", are included in this microfiche set. The microfiche set is arranged in the following sequence: (1) a Vocational Technical (VT) number index to documents in the microfiche collection, (2) the author index, the vocational and supporting services index, and the subject index from ARM, and (3) the full text of documents listed in the VT number index. The texts are filmed continuously in VT number sequence. (BS)

ED022065

Microfiche Collection of Clearinghouse Documents Reported in Abstracts of Research and Related Materials in Vocational and Technical Education

(ARM)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Compiled and Indexed by The ERIC Clearinghouse
on Vocational and Technical Education

FALL 1968

The Work Presented or Reported Herein was Performed Pursuant to a Grant from the U.S. Office of Education, Department of Health, Education and Welfare.

ERIC Clearinghouse
The Center for Vocational and Technical Education
The Ohio State University
980 Kinnear Road, Columbus, Ohio 43212

VT006926

INTRODUCTION

This collection of microfiche constitutes the documents in the local Clearinghouse which are not announced in Research in Education (RIE) but are announced in the Fall 1968 issue of Abstracts of Research and Related Materials in Vocational and Technical Education (ARM). Microfiche for these items is obtainable only through purchase of this set or from agencies who have this set, and who have the capability of reproducing microfiche. The microfiche set is arranged in the following sequence:

1. Vocational Technical (VT) Number Index to Microfiche Collection of Clearinghouse Documents Reported in ARM, Fall 1968.
2. Selected indexes from ARM, Fall 1968.
    a. Personal and Institutional Author Index
    b. Vocational and Supporting Services Index
    c. Subject Index

    The page numbers shown in these indexes refer to the location of the abstracts in ARM, Fall 1968.
3. The full text of documents listed in the VT Number Index on page 1.

    The documents are arranged in numerical order according to VT numbers. The texts of materials in this microfiche set have been filmed continuously in VT number sequence thereby facilitating the purchase of the texts of VT documents not cited in RIE on microfiche with one order.

The documents identified in the indexes with an ERIC Document (ED) number are usually available as separate documents from the ERIC Document Reproduction Service (EDRS). Information about EDRS service can be found in ARM or RIE. Items not available through EDRS will usually have a source of availability at the end of the abstract.

Vocational Technical (VT) Number

Index to Microfiche Collection of Clearinghouse Documents

Reported in ARM, Fall 1968

VT Number

VT 000 205
VT 000 669
VT 001 010
VT 001 024
VT 001 033

VT 001 103
VT 001 120
VT 001 236
VT 001 261
VT 001 269

VT 001 372
VT 001 392
VT 001 393
VT 001 641
VT 001 690

VT 001 860
VT 001 907
VT 002 019
VT 002 023
VT 002 250

VT Number

VT 002 545
VT 002 646
VT 002 849
VT 003 036
VT 003 226

VT 003 431
VT 003 621
VT 003 946
VT 003 949
VT 003 950

VT 004 061
VT 004 063
VT 004 486
VT 004 696
VT 005 136

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

ACTION-HOUSING INC., PITTSBURGH, PA.
VT 003 854 ED 011 984 108
Action for Employment.
VT 003 855 ED 015 293 109
Summer Community Youth Work Program.

ALABAMA STATE DEPT. OF EDUCATION, MONTGOMERY. AGRICULTURAL EDUCATION SERVICE
VT 000 562 ED 018 541 50
A Study of Employment Opportunities in Off-Farm Agricultural Occupations in Alabama.

ALBRACHT, JAMES J.
VT 003 950 ED 015 301 44
What Does it Take to Sell Feed.

ALMARODE, RICHARD L.
VT 004 638 ED 015 734 25
Guidelines for Hospitality Education in Junior Colleges.

ALTMAN, JAMES W.
VT 001 460 ED 018 580 148
What Kinds of Occupational Information Do Students Need.

AMERICAN ASSN. OF JUNIOR COLLEGES, WASHINGTON, D.C.
VT 004 638 ED 015 734 25
Guidelines for Hospitality Education in Junior Colleges.

AMERICAN DENTAL ASSN., CHICAGO, ILL. COUNCIL ON DENTAL EDUCATION.
VT 004 486 25
Requirements for Approval of Educational Programs for Dental Assistants.

AMERICAN HOME ECONOMICS ASSN., WASHINGTON, D.C.
VT 000 684 ED 018 546 100
Working with Low-Income Families.
VT 000 685 ED 017 633 145
Educating the Teen-Ager in Human Relations and Management of Resources.

AMERICAN INDUSTRIAL ARTS ASSN., WASHINGTON, D.C.
VT 002 552 ED (See Sep '68 RIE) 129
Industrial Arts and Technology, Past, Present, and Future.
VT 003 593 ED 017 678 129
Developing Human Potential through Industrial Arts.

Page

VT 003 612 ED 018 636 138
Federal Aid for Industrial Arts.

AMERICAN INDUSTRIAL ARTS ASSN., WASHINGTON, D.C. EQUIPMENT GUIDE COMMITTEE
VT 002 895 ED 017 664 98
A Guide for Equipping Industrial Arts Facilities.

AMERICAN INSTITUTES FOR RESEARCH, PITTSBURGH, PENNSYLVANIA
VT 001 392 35
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. First Quarterly Technical Report.
VT 001 393 36
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. Second Quarterly Technical Report, The Problem of Defining Objectives.
VT 003 702 ED 016 824 93
An Evaluation Plan for the Greene Joint Vocational School.

AMERICAN VOCATIONAL ASSN., WASHINGTON, D.C.
VT 001 907 17
Pilot Training Programs in Home Economics.

ANDERSON, HAROLD
VT 001 714 ED 016 053 16
Handbook for Developing and Operating Agricultural Occupations Programs.

ANGEL, JAMES L.
VT 000 178 ED 017 622 144
Report of the Vocational Guidance Seminars, Summer 1965.

ARCUS, PETER
VT 002 881 ED 016 797 63
Manpower Requirements and Demand in Agriculture by Regions and Nationally, with Estimation of Vocational Training and Educational Needs and Productivity.

ARIZONA OCCUPATIONAL RESEARCH COORDINATING UNIT, PHOENIX
VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

ARIZONA STATE DEPT. OF VOCATIONAL EDUCATION, PHOENIX
VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.

ARIZONA UNIV., TUCSON. DEPT. OF AGRICULTURAL EDUCATION
VT 001 381 ED 016 046 34
The Status of Specialized Courses in Vocational Agriculture.

ARIZONA UNIV., TUCSON. DIV. OF ECONOMIC AND BUSINESS RESEARCH
VT 004 234 ED 016 115 76
Farmers, Workers, and Machines.

AUBURN UNIV., ALABAMA. DEPT. OF VOCATIONAL, TECHNICAL AND PRACTICAL ARTS EDUCATION
VT 000 562 ED 018 541 50
A Study of Employment Opportunities in Off-Farm Agricultural Occupations in Alabama.

AULD, W. DAVID, JR., COMP.
VT 003 666 ED 014 581 108
Handicapped Youth Experimental Training Fund.

BAKER, RICHARD A.
VT 000 562 ED 018 541 50
A Study of Employment Opportunities in Off-Farm Agricultural Occupations in Alabama.

BANGS, KENNETH
VT 001 452 ED 018 577 135
The Proceedings of the DPE (Research Training) Conference.

BARLOW, MELVIN L.
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.

BARTEL, CARL R.
VT 000 895 ED 018 551 88
The Status of and Need for Industrial Education in the Public Secondary Schools in Utah.

BAYSINGER, GERALD
VT 004 262 ED 016 130 22
The Fluid Power Institutes Tested Procedures for Introducing Emerging Technologies, 1966.

Page

BEAR, W. FORREST
VT 003 621 41
How Much Instruction in Farm Machinery.

BEARD, H.G.
VT 003 260 ED 015 263 65
National Vocational-Technical Education Seminar on Occupational Mobility and Migration.

BECK, BERTRAM M. AND OTHERS
VT 002 722 ED 015 256 106
The Remedial Education Program.

BELITSKY, A. HARVEY
VT 004 260 ED 016 128 78
The Job Hunt.

BERRY, JANE AND OTHERS
VT 001 125 ED 018 558 147
Counseling Girls and Women.

BERTOLEAT, FREDERICK
VT 002 121 ED 017 658 137
Research in Vocational Education.

BEVINS, LYNN G.
VT 000 669 5
Industrial Cooperative Training Programs.

BINKLEY, HAROLD
VT 000 103 ED 018 532 2
Developing Programs in Agricultural Occupations.
VT 001 414 ED 018 573 60
Competencies Needed by Employees in Agricultural-Supply Businesses--Sales and Service.

BIO-DYNAMICS, INC., CAMBRIDGE, MASS.
VT 001 533 MP 000 107 104
Job Corps Enrollee Applicant Medical Record Analysis and Screening.

BOLDT, MILTON
VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

BOOKMAN, CELIA
VT 002 849 62
Job Training for the Mature Woman Entering or Reentering the Labor Force.

BOSS, MILTON R.
VT 004 396 ED 011 709 119
Occupations in the Care and Rehabilitation of the Mentally Retarded.

BOTTOMS, JAMES E.
VT 001 612 ED 018 599 149
Developing a Program of Student Personnel Services for Area Vocational-Technical Schools.

BOWLING GREEN STATE UNIV., OHIO
VT 004 696 26
Advisory Committees, "Selection and Use".

BRANTNER, S.T.
VT 001 365 ED 016 044 157
Trade and Technical Teacher's Opinions on Inservice Education.

BRAZZIEL, WILLIAM F.
VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decisions to Forego Retraining Under Manpower Development and Training Act of 1962.

BRENNAN, THOMAS J.
VT 000 910 ED 018 552 100
Industrial Arts and High School Dropouts.

BRIGGS, VERNON M., JR.
VT 004 310 ED 015 327 78
Negro Participation in Apprenticeship Programs.

BROWN, BILL WESLEY
VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.

BROWN, DAVID G.
VT 004 312 ED 016 134 160
Placement Services for College Teachers.
VT 004 313 ED 016 135 161
Academic Labor Markets.

Page

BRUNSMAN, HOWARD G.
VT 004 311 ED 016 133 79
U.S. Census of Population, 1960. Subject Reports, Labor Reserve -- Age, Education, Occupation, and Other Characteristics of Former Members of the Labor Force.

BUREAU OF SOCIAL SCIENCE RESEARCH, INC., WASHINGTON, D.C.
VT 003 663 MP 000 201 107
Follow-Up Study of MDTA E and D Project at North Carolina A and T State College.
VT 004 100 ED 015 320 73
The Unemployed and the Underemployed.

BUREAU OF THE CENSUS, WASHINGTON, D.C.
VT 004 311 ED 016 133 79
U.S. Census of Population, 1960. Subject Reports, Labor Reserve -- Age, Education, Occupation, and Other Characteristics of Former Members of the Labor Force.

BUREAU OF LABOR STATISTICS (DOL), WASHINGTON, D.C.
VT 000 871 ED 018 549 52
Industry Wage Survey--Banking, November-December 1964.
VT 002 910 ED 017 669 63
A Directory of Community Wage Surveys, 1948-June 1965.
VT 004 331 ED 016 140 82
Health Insurance Coverage for Workers on Layoff.
VT 003 848 ED 015 290 68
Labor Force Projections by Color, 1970-80.

BUSINESS TEACHERS' CLUB OF METROPOLITAN DETROIT, MICH. RESEARCH COMMITTEE
VT 001 244 ED 017 646 134
Detroit Study of the Effectiveness of High School Education for Entrance into the World of Work.

CAIN, PAUL S.
VT 000 219 ED 017 623 49
Employment Opportunities and Usable Agricultural Skills in Non-Farm Agricultural Occupations in Appalachia.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

CALIFORNIA STATE DEPT. OF EDUCATION, SACRAMENTO
VT 001 372 11
Vocational Education in California, 1964-65.
VT 002 646 38
Technical Illustration, Guide for Administrators, Instructors, and Students.

CALIFORNIA STATE DEPT. OF EDUCATION, SACRAMENTO. BUREAU OF AGRICULTURAL EDUCATION
VT 001 264 ED 016 042 89
An Evaluation of the Farm Labor Supervisor Training Program in California.

CALIFORNIA STATE DEPT. OF EDUCATION, SACRAMENTO. BUREAU OF BUSINESS EDUCATION
VT 001 331 ED 018 563 58
Selected Entry Office Jobs for the High School Student.
VT 001 332 ED 018 564 34
Office Occupation Programs Under the Vocational Education Act of 1963.
VT 001 598 ED 018 598 36
Sample Business Education Training Plans Conducted Under Manpower Development and Training Programs.

CALIFORNIA STATE DEPT. OF EDUCATION, SACRAMENTO. BUREAU OF HOMEMAKING EDUCATION
VT 000 519 ED 017 627 96
Space and Equipment for Homemaking Education.

CALIFORNIA STATE DEPT. OF EDUCATION, SACRAMENTO. BUREAU OF INDUSTRIAL EDUCATION
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.

CALIFORNIA STATE DEPT. OF EDUCATION, SACRAMENTO. VOCATIONAL EDUCATION SERVICES
VT 001 089 ED 018 556 146
Leadership for Vocational Education in California.
VT 001 364 ED 018 568 11
Leadership for Vocational Education in California.
VT 001 447 ED 018 576 12
Leadership for Vocational Education in California--January-February, 1966.

Page

CALIFORNIA UNIV., BERKELEY. DEPT. OF INDUSTRIAL ENGINEERING AND OPERATIONS RESEARCH
VT 004 159 ED 015 326 140
Evaluation of Changes in Skill-Profile and Job-Content Due to Technological Change.

CALIFORNIA UNIV., BERKELEY. SCHOOL OF EDUCATION
VT 003 249 ED 017 677 19
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level.
VT 004 417 ED 016 858 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume One.
VT 004 418 ED 017 688 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume Two.

CALIFORNIA UNIV., DAVIS. DEPT. OF AGRICULTURAL EDUCATION
VT 001 264 ED 016 042 89
An Evaluation of the Farm Labor Supervisor Training Program in California.

CALIFORNIA UNIV., LOS ANGELES. DIV. OF VOCATIONAL EDUCATION
VT 001 089 ED 018 556 146
Leadership for Vocational Education in California.
VT 001 364 ED 018 568 11
Leadership for Vocational Education in California (November, 1965).
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.
VT 001 447 ED 018 576 12
Leadership for Vocational Education in California--January-February, 1966.

CALLEJO, RICARDO A.
VT 002 371 ED 016 063 105
Preparacion, Progreso, Porvenir.

CANADA DEPT. OF LABOUR, OTTAWA (ONTARIO). WOMEN'S BUREAU
VT 002 849 62
Job Training for the Mature Woman Entering or Reentering the Labor Force.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

CARR, RUBY C.
VT 001 428 ED 016 047 90
A Study of the Practical Nursing Programs in Vermont.

CATHOLIC UNIVERSITY OF AMERICA, WASHINGTON, D.C.
VT 004 158 ED 016 110 118
Work Values of the Handicapped.

CENTER FOR THE STUDY OF LIBERAL EDUCATION FOR ADULTS, CHICAGO, ILL.
VT 001 313 ED 017 650 168
Liberal Orientations for Vocational Teaching.

CHAMPAIGN COMMUNITY UNIT 4 SCHOOL DISTRICT, ILLINOIS
VT 004 114 MP 000 331 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone. Abstract.
VT 004 115 ED 016 106 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone.

CHICAGO UNIV., ILL. NATIONAL OPINION RESEARCH CENTER
VT 004 327 ED 015 332 80
College, Color, and Employment.

CLARK, RAYMOND M.
VT 003 946 ED 014 616 42
Post-High School Curriculum for the Grain, Feed, Seed and Farm Supply Industry.

CLEMSON UNIV., S.C. DEPT. OF AGRICULTURAL EDUCATION
VT 001 188 ED 018 559 56
Occupations of South Carolina's Vocational Agriculture Students Completing a Prescribed Course, 1959-63.

COGSWELL, J.F. AND OTHERS
VT 004 528 ED 017 710 153
Exploratory Study of Information--Processing Procedures and Computer-Based Technology in Vocational Counseling.

Page

COLLINS, CHARLIE J.
VT 004 836 ED 017 723 27
Study of Industrial Arts Education in Public Secondary Schools of the Southern Appalachian Region.

COLORADO STATE BOARD FOR VOCATIONAL EDUCATION, DENVER
VT 000 555 ED 018 539 86
An Instrument for Use in the Self Evaluation of State Staff Supervisory Programs in Agriculture Education.
VT 001 714 ED 016 053 16
Handbook for Developing and Operating Agricultural Occupations Programs.

COLORADO STATE UNIV., FORT COLLINS. COLLEGE OF BUSINESS
VT 004 484 ED 016 861 163
A Study of the Effectiveness of Data Processing Summer Institutes for Business Teachers.

COLORADO STATE UNIV., FORT COLLINS. DEPT. OF VOCATIONAL EDUCATION
VT 001 714 ED 016 053 16
Handbook for Developing and Operating Agricultural Occupations Programs.

COLORADO UNIV., BOULDER. BUREAU OF ECONOMIC RESEARCH
VT 000 973 ED 017 641 133
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.
VT 004 309 ED 016 132 141
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.

COLUMBIA UNIV., NEW YORK. BUREAU OF APPLIED SOCIAL RESEARCH
VT 001 207 ED 018 561 57
The Employment Situation of White and Negro Youth in the City of Baltimore.

COLUMBIA UNIV., NEW YORK. SCHOOL OF SOCIAL WORK RESEARCH CENTER
VT 002 722 ED 015 256 106
The Remedial Education Program.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

COLUMBIA UNIV., NEW YORK, N.Y. SEMINAR ON TECHNOLOGY AND SOCIAL CHANGE
VT 004 111 ED 015 324 75
Obsolescence and Updating of Engineers' and Scientists' Skills.

COMMITTEE OF 100, MARSHALL, MICH. IMPLEMENTATION COMMITTEE
VT 001 033 55
Pattern for Progress, An Extension of the Blueprint for Action.

COMPTROLLER GENERAL, WASHINGTON, D.C.
VT 001 556 ED 018 591 14
Report to the Congress of the United States, Review of Absences of Trainees Enrolled in Institutional Training Programs.

CONFERENCE ON GOVERNMENT-UNIVERSITY RELATIONS IN THE PROFESSIONAL PREPARATION AND EMPLOYMENT OF COUSELORS
VT 004 317 ED 016 136 152
Counselor Development in American Society.

CONNECTICUT STATE DEPT. OF EDUCATION, HARTFORD. BUREAU OF VOCATIONAL-TECHNICAL SCHOOLS
VT 001 103 56
Graduate Follow-Up, 1964.

COOK, FRED S.
VT 001 244 ED 017 646 134
Detroit Study of the Effectiveness of High School Education for Entrance into the World of Work.
VT 001 453 ED 018 578 60
The Need for In-School Business Data Processing Program.
VT 001 484 ED 017 653 97
Office Machines Used in Business Today.

COOK, JAMES L.
VT 004 557 ED 018 654 124
Level of Accounts and Records in Relation to Business and Personal Characteristics of Farmers in Agricultural Education.

COOPER, SOPHIA
VT 003 848 ED 015 290 68
Labor Force Projections by Color, 1970-80.

Page

CORNELL UNIV., ITHACA, N.Y.
VT 002 889 ED 013 538 169
The Relative Effectiveness of Supplementing Programed Instruction with Blocked Versus Spaced Review.

CORPLAN ASSOCIATES, CHICAGO, ILL.
VT 000 099 ED 018 531 172
A Bibliography of Published and Unpublished Vocational and Technical Education Literature.

CORPLAN ASSOCIATES, CHICAGO, ILL. TECHNOLOGY CENTER
VT 001 362 ED 018 567 58
Survey of Information on Vocational and Technical Education in the State of Illinois.

COTRELL, CALVIN J.
VT 004 939 ED 017 730 125
Educational Media in Vocational and Technical Education.

COUNCIL FOR DISTRIBUTIVE TEACHER EDUCATION
VT 002 897 ED 017 665 159
Survey of Practices for College Distributive Education and Retailing Occupational Experience Programs.

CRAMBERT, ALBERT C.
VT 003 820 ED 014 594 139
Follow-Up Techniques in a Large-Scale Test Validation Study.

CRAWFORD, THOMAS JAMES
VT 004 397 ED 016 856 170
The Effect of Emphasizing Production Typewriting, Contrasted with Speed Typewriting in Developing Production Typewriting Ability.

CROSSMAN, EDWARD R.F.W. AND OTHERS
VT 004 159 ED 015 326 140
Evaluation of Changes in Skill-Profile and Job-Content Due to Technological Change.

CURTIS, C.M.
VT 000 546 ED 018 538 50
Occupational Opportunities and Training Needs for Non-Farm Agricultural Jobs in the Metropolitan Areas of Louisiana.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

CUSHMAN, HAROLD R.
VT 000 043 ED 017 620 2
The Organization and Utilization of Agricultural Advisory Boards in New York State.

DPE (RESEARCH TRAINING) CONFERENCE
VT 001 452 ED 018 577 135
The Proceedings of the DPE (Research Training) Conference.

DETROIT PUBLIC SCHOOLS, MICHIGAN
VT 001 244 ED 017 646 134
Detroit Study of the Effectiveness of High School Education for Entrance into the World of Work.

DEUTSCH, ELIZABETH C.
VT 004 329 ED 015 333 81
Sociological Studies of Occupations, A Bibliography.

DEVORE, PAUL W.
VT 002 954 ED 016 069 39
Curricular Considerations, Oswego.

DILLON, ROY D.
VT 000 219 ED 017 623 49
Employment Opportunities and Usable Agricultural Skills in Non-Farm Agricultural Occupations in Appalachia.

DIRKS, MARIE AND OTHERS
VT 004 593 ED 016 865 164
The Special Contribution of the College Home Economics Education Supervisor to the Student Teaching Situation.

DISTRICT OF COLUMBIA EMPLOYMENT SERVICE, WASHINGTON, D.C.
VT 004 254 ED 016 126 77
Start Your Career with Apprenticeship in Washington, D.C.

DOMMER, CAROLYN
VT 004 365 ED 016 854 44
Hospitality Education Curriculum Development Project.

DROEGE, ROBERT C.
VT 003 680 ED 014 585 92
Validity Extension Data on the General Aptitude Test Battery.
VT 003 820 ED 014 594 139
Follow-Up Techniques in a Large-Scale Test Validation Study.

Page

DUNLAP AND ASSOCIATES, INC.
VT 003 361 ED 016 076 107
Survey of Terminees from Out-of-School NYC Projects.

EDMUNDS, NEIL A.
VT 004 932 ED 017 728 28
The Qualifications and Professional Responsibilities of Vocational Directors at the Local District Level in the State of Utah.

EDUCATIONAL RESEARCH COUNCIL OF GREATER CLEVELAND, OHIO
VT 001 486 ED(See Sep '68 RIE) 128
A Report on the Administrator's Conference on Vocational Education.

EDUCATIONAL TELEVISION STATION, KQED, SAN FRANCISCO, CALIFORNIA
VT 002 371 ED 016 063 105
Preparacion, Progreso, Porvenir.

EHRESMAN, NORMAN D.
VT 000 429 ED 018 534 32
A Study of Education Regarding Cooperative Organizations in Rural Areas in 118 Illinois High Schools.

EMPLOYMENT SERVICE, WASHINGTON, D.C.
VT 002 352 ED 016 062 61
Occupations in Electronic Computing Systems.
VT 003 858 MP 000 270 69
Job Vacancy Surveys.
VT 003 867 ED 014 614 110
Report on MDTA Institutional Training Program Developments.
VT 004 255 ED 016 127 77
Occupations in the Field of Library Science.
VT 004 396 ED 011 709 119
Occupations in the Care and Rehabilitation of the Mentally Retarded.

FERGUSON, EDWARD T., JR.
VT 002 897 ED 017 665 159
Survey of Practices for College Distributive Education and Retailing Occupational Experience Programs.

FERMAN, LOUIS A.
VT 004 086 ED 015 308 73
The Negro and Equal Employment Opportunities.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

FESTANTE, PETER AND OTHERS
VT 000 557 ED 018 540 4
A Guide for Part-Time Cooperative Education Programs.

FISHMAN, LESLIE AND OTHERS
VT 000 973 ED 017 641 133
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.
VT 004 309 ED 016 132 141
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.

FLORIDA STATE DEPT. OF EDUCATION, TALLAHASSEE. DISTRIBUTIVE, COOPERATIVE, AND BUSINESS EDUCATION SECTION
VT 000 982 ED 011 091 8
Organization and Operation of Distributive Education Programs for Adults.

FLORIDA STATE DEPT. OF EDUCATION, TALLAHASSEE. DIV. OF VOCATIONAL, TECHNICAL, AND ADULT EDUCATION
VT 000 927 ED 017 638 7
Fact-Finding in Vocational Education.

FLUID POWER SOCIETY, THIENSVILLE, WIS.
VT 004 262 ED 016 130 22
The Fluid Power Institutes Tested Procedures for Introducing Emerging Technologies, 1966.

FOURTUNE, ALEXANDER A.
VT 004 326 ED 015 331 80
Unused Manpower, the Nation's Loss.

FRIGIOLA, NICHOLAS F.
VT 001 030 ED 018 555 9
Technical Education.

GARRETT, PAULINE G.
VT 001 907 17
Pilot Training Programs in Home Economics.

GEORGE PEABODY COLLEGE FOR TEACHERS, NASHVILLE, TENN. DIV. OF SURVEYS AND FIELD SERVICES
VT 002 163 ED 016 785 18
Vocational Education in Utah.

Page

GEORGIA STATE BOARD OF HEALTH, ATLANTA. DIV. OF VOCATIONAL REHABILITATION
VT 004 112 MP 000 329 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program. Summary.
VT 004 113 ED 016 105 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program.

GEORGIA STATE DEPT. OF EDUCATION, ATLANTA. DIV. OF VOCATIONAL EDUCATION
VT 001 612 ED 018 599 149
Developing a Program of Student Personnel Services for Area Vocational-Technical Schools.

GEORGIA STATE DEPT. OF EDUCATION, ATLANTA. REHABILITATION SERVICES
VT 004 112 MP 000 329 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program. Summary.
VT 004 113 ED 016 105 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program.

GEORGIA UNIV., ATHENS. VOCATIONAL RESEARCH
VT 001 573 ED 018 592 136
Report of a National Vocational-Technical Education Seminar on Research and Curriculum Development.

GIBSON, FRANCIS R.
VT 002 250 92
The Use of the Differential Aptitude Tests in Predicting Achievement in High School and College.

GOELDNER, CHARLES R. AND OTHERS
VT 001 860 17
Real Estate Education and Research Needs in the San Fernando Valley.

GRAYBEAL, WILLIAM S.
VT 001 516 ED 018 586 103
Virginia Secondary School Dropouts, 1962-63.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

GREENFIELD, HARRY I.
VT 004 384 ED 016 143 83
Manpower and the Growth of Producer Services.

GREGG, RANDOLPH N.
VT 004 396 ED 011 709 119
Occupations in the Care and Rehabilitation of the Mentally Retarded.

GRIFFITH, WARREN L.
VT 001 410 ED 017 652 59
Agricultural Occupations Other than Farming in Missouri.

GRINDER, ROBERT E.
VT 004 259 ED 016 849 151
A Study of the Influences of the Father's Job and Social Status on the Occupational and Social Goals of Youth.

GRITZMACHER, JOAN
VT 004 483 ED 016 860 162
Evaluation of Student Teaching in Home Economics.

HAMILTON, PHYLLIS D.
VT 004 332 ED 016 141 83
Impacts of Technological Changes in Warehousing, Phase I.

HAMILTON, ROSS E.
VT 001 486 ED (See Sep '68 RIE) 128
A Report on the Administrator's Conference on Vocational Education.

HARRIS, JAMES N.
VT 004 855 ED 017 727 28
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education.

HARRIS, NORMAN C.
VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.

HAUCK, EDWARD F.
VT 004 939 ED 017 730 125
Educational Media in Vocational and Technical Education.

HAWAII STATE HOSPITAL, KANEOHE
VT 004 062 ED 016 101 111
The Remotivation of Chronic Schizophrenic Men Patients.

Page

VT 004 063 112
The Remotivation of Chronic Schizophrenic Men Patients, Abstract.

HEADY, EARL O.
VT 002 881 ED 016 797 63
Manpower Requirements and Demand in Agriculture by Regions and Nationally, with Estimation of Vocational Training and Educational Needs and Productivity.

HEALTH CAREERS COUNCIL OF ILLINOIS, CHICAGO
VT 001 892 ED 017 656 150
Pathways to Health Careers.

HEMP, PAUL E.
VT 000 429 ED 018 534 32
A Study of Education Regarding Cooperative Organizations in Rural Areas in 118 Illinois High Schools.
VT 004 660 ED 016 867 164
University of Illinois Summer Institute for Teachers of Ornamental Horticulture in the Midwestern Section of the United States.

HENDERSON, NORMAN B.
VT 004 095 ED 012 930 115
The Cooperative Program for Rehabilitation of the Disabled Indian.
VT 004 161 MP 000 339 118
The Cooperative Program for Rehabilitation of the Disabled Indian. Summary.

HENSEL, JAMES W.
VT 000 586 ED 017 628 33
The Development of a Modern Curriculum in Vocational Agriculture.

HILL, C.W.
VT 000 083 ED 018 530 168
Teaching Agricultural Mechanics in High School.

HULL, WILLIAM L.
VT 001 261 156
An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents.

HUSON, CAROLYN F.
VT 004 327 ED 015 332 80
College, Color, and Employment.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

HYMAN, THEODORE M.
VT 001 840 ED 017 654 169
Programmed Learning in Extension Training.

IDAHO OCCUPATIONAL RESEARCH UNIT, MOSCOW
VT 001 641 150
High School Vocational Interest Survey in Canyon County.

IDAHO STATE UNIV., POCATELLO
VT 004 082 ED 015 306 112
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing.
VT 004 083 MP 000 308 113
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing. Summary.

ILLINOIS AGRICULTURAL ASSOCIATION, BLOOMINGTON
VT 000 429 ED 018 534 32
A Study of Education Regarding Cooperative Organizations in Rural Areas in 118 Illinois High Schools.

ILLINOIS RESEARCH AND DEVELOPMENT COORDINATING UNIT, SPRINGFIELD.
VT 000 099 ED 018 531 172
A Bibliography of Published and Unpublished Vocational and Technical Education Literature.
VT 001 362 ED 018 567 58
Survey of Information on Vocational and Technical Education in the State of Illinois.

ILLINOIS STATE BOARD OF VOCATIONAL EDUCATION, SPRINGFIELD. VOCATIONAL EDUCATION DIV.
VT 001 690 16
Essentials and Requirements of a Vocational Home Economics Program.

ILLINOIS STATE BOARD OF VOCATIONAL EDUCATION AND REHABILITATION, SPRINGFIELD
VT 000 868 ED 013 645 51
Practical Nursing in Illino[illegible].

ILLINOIS UNIV., URBANA
VT 004 660 ED 016 867 164
University of Illinois Summer Institute for Teachers of Ornamental Horticulture in the Midwestern Section of the United States.

Page

ILLINOIS UNIV., URBANA. DEPT. OF VOCATIONAL AND TECHNICAL EDUCATION
VT 000 868 ED 013 645 51
Practical Nursing in Illinois.

ILLINOIS UNIV., URBANA. DIV. OF AGRICULTURAL EDUCATION
VT 000 429 ED 018 534 32
A Study of Education Regarding Cooperative Organizations in Rural Areas in 118 Illinois High Schools.
VT 003 674 ED 018 638 42
Education Regarding Credit for Agricultural Production. Report no. 2, Survey of Teachers of Agriculture.

ILLINOIS UNIV., URBANA. DIV. OF HOME ECONOMICS EDUCATION
VT 000 670 ED 018 544 128
A New Look at the Vocational Purposes of Home Economics Education.
VT 000 681 ED 017 631 6
The Employment Aspect of Home Economics Education.

INDIANA EMPLOYMENT SECURITY DIV., INDIANAPOLIS. RESEARCH AND STATISTICS SECTION
VT 003 226 65
Manpower Requirements in Indiana Hospitals.
VT 003 300 ED 016 810 66
Education and Vocational Training of TEC Claimants.

INDIANA VOCATIONAL TECHNICAL COLL., INDIANAPOLIS. DEPT. OF RESEARCH
VT 001 541 ED 018 588 148
70,000 High School Seniors, Their Educational and Vocational Plans.

INSTITUTE FOR THE CRIPPLED AND DISABLED, NEW YORK, N.Y.
VT 004 060 ED 016 100 110
Work and Mental Disorder.
VT 004 061 111
Work and Mental Disorder. Summary.

IOWA STATE DEPT. OF PUBLIC INSTRUCTION, DES MOINES
VT 001 511 ED 018 584 14
Guidelines for the Development of Merged Area Vocational Schools and Area Community Colleges by the Merged Area Boards.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

IOWA STATE UNIV. OF SCIENCE AND TECHNOLOGY, AMES
VT 002 881 ED 016 797 63
Manpower Requirements and Demand in Agriculture by Regions and Nationally, with Estimation of Vocational Training and Educational Needs and Productivity.

JACOBY, ALBERTA
VT 003 308 ED 016 074 123
Development of a Film on Homemaker Services.

JAIN, NEMI C.
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

JARMIN, MARTIN V.
VT 000 043 ED 017 620 2
The Organization and Utilization of Agricultural Advisory Boards in New York State.

JILOCA, EDITHA L.
VT 005 136 173
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.

JOHNSTON, DENIS F.
VT 003 848 ED 015 290 68
Labor Force Projections by Color, 1970-80.

JUDGE, HOMER V.
VT 000 896 ED 017 636 53
Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts.

KANSAS STATE BOARD FOR VOCATIONAL EDUCATION, TOPEKA
VT 001 202 ED 017 644 57
A Study of Non-Farm Agricultural Occupations in Kansas.

KANSAS STATE UNIV., MANHATTAN. SCHOOL OF EDUCATION
VT 001 202 ED 017 644 57
A Study of Non-Farm Agricultural Occupations in Kansas.

Page

KARNES, MERLE B. AND OTHERS
VT 004 114 MP 000 331 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone. Abstract.
VT 004 115 ED 016 106 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone.

KENTUCKY UNIV., LEXINGTON
VT 004 656 ED 016 144 141
Structuring a Program of Research and Development for Kentucky.

KENTUCKY UNIV., LEXINGTON. DEPT. OF AGRICULTURAL EDUCATION
VT 000 103 ED 018 532 2
Developing Programs in Agricultural Occupations.
VT 001 414 ED 018 573 60
Competencies Needed by Employees in Agricultural-Supply Businesses--Sales and Service.

KENTUCKY UNIV., LEXINGTON. RESEARCH FOUNDATION
VT 001 334 ED 018 565 135
Research Training Institute for Persons in Vocational Education Participating in Research and Development Activities.

KEYSERLING, MARY DUBLIN
VT 003 662 MP 000 200 21
Child Day Care Service Needs.

KINCAID, HARRY V.
VT 004 332 ED 016 141 83
Impacts of Technological Changes in Warehousing, Phase I.

KINNANE, JOHN F.
VT 004 158 ED 016 110 118
Work Values of the Handicapped.

KNEELAND, NATALIE
VT 002 023 158
Distributive Education for Adults, Selection and Training of Part-Time Instructors.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

KNUDSON, CLINTON H.
VT 001 402 ED 018 572 102
A Study of Dropouts in Texas and Minnesota.

KOLODRUBETZ, WALTER W.
VT 004 331 ED 016 140 82
Health Insurance Coverage for Workers on Layoff.

KOLTUV, MYRON
VT 004 060 ED 016 100 110
Work and Mental Disorder.
VT 004 061 111
Work and Mental Disorder. Summary.

LAMAR, CARL F.
VT 001 334 ED 018 565 135
Research Training Institute for Persons in Vocational Education Participating in Research and Development Activities.
VT 004 656 ED 016 144 141
Structuring a Program of Research and Development for Kentucky.

LANDIS, WILLIAM HARPER
VT 002 026 ED 016 784 91
Secondary Students' Mathematics Competencies in Relation to Employment Tests.

LAW, GORDON F.
VT 005 039 ED 016 874 166
Research Visibility, Vocational Education Is Service--Toward Teaching Excellence.
VT 005 268 ED 017 743 45
Research Visibility. Vocational Education Is Service--Curriculum Development and Instructional Materials.

LAWS, NORMAN G.
VT 000 901 ED 017 637 53
Mathematical Expectations of Technicians in Michigan Industries.

LEACH, T.L.
VT 000 682 ED 017 632 133
Proceedings of Annual Southern Regional Reserach Conference, Agricultural Education.

LEE, ALLEN
VT 003 249 ED 017 677 19
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level.

Page

LESTER, HERSCHEL T., JR.
VT 001 573 ED 018 592 136
Report of a National Vocational-Technical Education Seminar on Research and Curriculum Development.

LEUNG, CHO-KIN
VT 004 330 ED 015 334 82
Local Manpower Data Programs.

LEVENSON, BERNARD
VT 001 207 ED 018 561 57
The Employment Situation of White and Negro Youth in the City of Baltimore.

LINSON, MARVIN G.
VT 000 555 ED 018 539 86
An Instrument for Use in the Self Evaluation of State Staff Supervisory Programs in Agriculture Education.
VT 001 714 ED 016 053 16
Handbook for Developing and Operating Agricultural Occupations Programs.

LONG, GILBERT A. AND OTHERS
VT 000 779 ED 016 770 122
Transparency Masters for Agricultural Education...Interim Report.

LOOMBA, R.P
VT 004 106 ED 016 103 74
A Study of the Re-Employment and Unemployment Experiences of Scientists and Engineers Laid Off from 62 Aero-Space and Electronics Firms in the San Francisco Bay Area during 1963-65.

LOUISIANA STATE UNIV., BATON ROUGE. DEPT. OF VOCATIONAL AGRICULTURAL EDUCATION
VT 000 546 ED 018 538 50
Occupational Opportunities and Training Needs for Non-Farm Agricultural Jobs in the Metropolitan Areas of Louisiana.

LOVE, GENE M.
VT 004 451 ED 015 347 172
Abstracts of Research Studies in Agricultural Education Compiled in 1965-66 in the North Atlantic Region.

LOVELESS, AUSTIN G.
VT 000 895 ED 018 551 88
The Status of and Need for Industrial Education in the Public Secondary Schools in Utah.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

MCCLAY, DAVID R.
VT 001 264 ED 016 042 89
An Evaluation of the Farm Labor Supervisor Training Program in California.

MCCOLLUM, EARL
VT 003 949 ED 015 300 43
Agricultural Education in the Community College.

MCFADDEN, DENNIS
VT 004 295 ED 016 850 93
Development and Utilization of a National Vocational-Technical School Achievement Testing Program Using the Printing Trades as a Pilot Area.

MADISON VOCATIONAL, TECHNICAL AND ADULT SCHOOLS, WIS. SCHOOL OF DENTAL ASSISTANTS
VT 004 265 MP 000 366 23
Summary Report for the Year Ending June, 1967.

MANPOWER ADMINISTRATION (DOL), WASHINGTON, D.C.
VT 001 471 ED 018 581 103
Investment in Poor People.

MANPOWER ADMINISTRATION (DOL), WASHINGTON, D.C. INTERNATIONAL MANPOWER INST.
VT 003 959 ED 017 679 71
Symposium on Forecasting of Manpower Requirements.

MANPOWER ADMINISTRATION (DOL), WASHINGTON, D.C. OFFICE OF MANPOWER, AUTOMATION, AND TRAINING
VT 004 317 ED 016 136 152
Counselor Development in American Society.
VT 004 329 ED 015 333 81
Sociological Studies of Occupations, A Bibliography.

MANPOWER ADMINISTRATION (DOL), WASHINGTON, D.C. OFFICE OF MANPOWER POLICY, EVALUATION, AND RESEARCH
VT 000 959 ED 018 554 8
Report of the Secretary of Labor on Manpower Research and Training.
VT 002 385 ED 014 555 61
Technology and Manpower in the Health Service Industry, 1965-75.

Page

VT 004 089 ED 015 311 114
Secretarial Training with Speech Improvement.
VT 004 326 ED 015 331 80
Unused Manpower, the Nation's Loss.

MANPOWER RESEARCH COUNCIL, MILWAUKEE, WISCONSIN
VT 000 865 ED 017 634 51
Automation.

MARSH, C. PAUL
VT 001 840 ED 017 654 169
Programmed Learning in Extension Training.

MARSHALL, F. RAY
VT 004 310 ED 015 327 78
Negro Participation in Apprenticeship Programs.

MARTIN, WILLIAM E.
VT 004 234 ED 016 115 76
Farmers, Workers, and Machines.

MASSACHUSETTS STATE DEPT. OF EDUCATION, BOSTON. DIV. OF VOCATIONAL EDUCATION
VT 000 896 ED 017 636 53
Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts.
VT 001 010 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts State-Aided Vocational Schools, Class of 1962.
VT 001 024 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts, State-Aided Vocational Schools, Class of 1964.

MATHER, MARY E.
VT 000 205 156
The Role of Teacher Education Institutions, In-Service Programs.

MEMPHIS CITY SCHOOL SYSTEM, TENNESSEE
VT 001 454 ED 018 579 13
Pilot Training Program for Supervised Worker in Child Development Center.

MENTAL HEALTH FILM BOARD, NEW YORK, N.Y.
VT 003 308 ED 016 074 123
Development of a Film on Homemaker Services.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

MEYERS, EDMUND D., JR.
VT 001 207 ED 018 561 57
The Employment Situation of White and Negro Youth in the City of Baltimore.

MEYERS, SAMUEL M.
VT 004 100 ED 015 320 73
The Unemployed and the Underemployed.

MIAMI-DADE JUNIOR COLL., MIAMI, FLA.
VT 004 482 ED 016 859 123
Summer Institute, 1967.
VT 005 003 ED (See Sep '68 RIE) 126
Programming Exercises for Computer Aided Drafting.

MIAMI UNIV., FLORIDA
VT 002 941 ED 016 802 39
Research to Establish a College-Level Curriculum in Glass.

MICHIGAN STATE BOARD OF CONTROL FOR VOCATIONAL EDUCATION, LANSING
VT 000 672 ED 017 629 5
The Need for Area Vocational Schools in Michigan.

MICHIGAN STATE DEPT. OF PUBLIC INSTRUCTION, LANSING. DIV. OF VOCATIONAL EDUCATION
VT 000 901 ED 017 637 53
Mathematical Expectations of Technicians in Michigan Industries.

MICHIGAN STATE UNIVERSITY, DEPT. OF COMMUNICATION AND CONTINUING EDUCATION SERVICES
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

MICHIGAN STATE UNIV., EAST LANSING. COLL. OF EDUCATION
VT 004 365 ED 016 854 44
Hospitality Education Curriculum Development Project.

MICHIGAN UNIV., ANN ARBOR. INST. OF LABOR AND INDUSTRIAL RELATIONS
VT 004 086 ED 015 308 73
The Negro and Equal Employment Opportunities.

Page

MICHIGAN UNIV., ANN ARBOR. SCHOOL OF EDUCATION
VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.
VT 000 672 ED 017 629 5
The Need for Area Vocational Schools in Michigan

MICHIGAN VOCATIONAL EDUCATION RESEARCH COORDINATING UNIT
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

MILLER, HARRY L.
VT 001 313 ED 017 650 168
Liberal Orientations for Vocational Teaching.

MILWAUKEE INST. OF TECHNOLOGY, WIS. DEPT. OF NURSING
VT 000 678 ED 017 630 6
Associate in Applied Science in Nursing.

MILWAUKEE VOCATIONAL, TECHNICAL, AND ADULT SCHOOLS, WISCONSIN
VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.

MINNESOTA RESEARCH COORDINATION UNIT IN OCCUPATIONAL EDUCATION, MINNEAPOLIS
VT 002 944 ED 016 803 159
Review of Research in Vocational Technical Teacher Education.
VT 005 136 173
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.

MISSOURI STATE DEPT. OF EDUCATION, JEFFERSON CITY. AGRICULTURAL EDUCATION SECTION
VT 001 410 ED 017 652 59
Agricultural Occupations Other than Farming in Missouri.

MISSOURI STATE DEPT. OF LABOR AND INDUSTRIAL RELATIONS, JEFFERSON CITY
VT 001 125 ED 018 558 147
Counseling Girls and Women.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

MISSOURI UNIV., COLUMBIA. DEPT. OF AGRICULTURAL EDUCATION
VT 001 410 ED 017 652 59
Agricultural Occupations Other than Farming in Missouri.

MISSOURI UNIV., KANSAS CITY
VT 001 125 ED 018 558 147
Counseling Girls and Women.

MOBILIZATION OF YOUTH INC., NEW YORK, N.Y.
VT 002 722 ED 015 256 106
The Remedial Education Program.

MONDART, C.L.
VT 000 546 ED 018 538 50
Occupational Opportunities and Training Needs for Non-Farm Agricultural Jobs in the Metropolitan Areas of Louisiana.

MONTANA STATE UNIV., BOZEMAN. DEPT. OF AGRICULTURAL EDUCATION
VT 001 206 ED 018 560 9
Vocational Agriculture in Transition for Occupational Education.

MOREHEAD STATE UNIV., KENTUCKY. SCHOOL OF APPLIED SCIENCES AND TECHNOLOGY
VT 000 219 ED 017 623 49
Employment Opportunities and Usable Agricultural Skills in Non-Farm Agricultural Occupations in Appalachia.

MORPHONIOS, ALEX G.
VT 004 482 ED 016 859 123
Summer Institute, 1967.

MORRISON, EDWARD J.
VT 001 392 35
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. First Quarterly Technical Report.
VT 001 393 36
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. Second Quarterly Technical Report, The Problem of Defining Objectives.

Page

MORSCH, WILLIAM C.
VT 003 522 ED 016 818 67
A Technique for Projection of Occupational-Educational Requirements for State Educational Planning Areas.

MORTON, J. BROWN
VT 000 177. ED 017 621 48
Determination of Educational Needs of Selected Job Titles in Farm Implement Businesses in Oklahoma.

MOSS, JEROME, JR.
VT 002 944 ED 016 803 159
Review of Research in Vocational Technical Teacher Education.

NANGLE, GRACE L.
VT 003 689 ED 016 823 22
Health Occupations Education Centers.

NATIONAL ADVISORY HEALTH COUNCIL, WASHINGTON, D.C. ALLIED HEALTH PROFESSIONS EDUCATION SUBCOMMITTEE
VT 004 057 ED 016 835 72
Education for the Allied Health Professions and Services.

NATIONAL ASSN. OF STATE DIRECTORS OF VOCATIONAL EDUCATION
VT 003 585 ED 018 635 20
Position Statement on a National Manpower Policy.

NATIONAL CENTER FOR EDUCATIONAL STATISTICS (DHEW), WASHINGTON, D.C. DIV. OF OPERATIONS ANALYSIS
VT 003 522 ED 016 818 67
A Technique for Projection of Occupational-Educational Requirements for State Educational Planning Areas.

NATIONAL CONFERENCE ON THE DIFFUSION OF EDUCATIONAL IDEAS
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

NATIONAL SAFETY COUNCIL, CHICAGO, ILL.
VT 001 269 97
Safety in the Drafting Room.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

NATIONAL VOCATIONAL-TECHNICAL EDUCATION SEMINAR ON RESEARCH AND CURRICULUM DEVELOPMENT
VT 001 573 ED 018 592 136
Report of a National Vocational-Technical Education Seminar on Research and Curriculum Development.

NEBRASKA UNIV., LINCOLN. DEPT. OF AGRICULTURAL EDUCATION
VT 001 846 ED 016 056 137
Research Conference in Agricultural Education.

NEFF, WALTER S.
VT 004 060 ED 016 100 110
Work and Mental Disorder.
VT 004 061 111
Work and Mental Disorder. Summary.

NELSON, HELEN Y.
VT 004 483 ED 016 860 162
Evaluation of Student Teaching in Home Economics.

NELSON, TRAVIS
VT 003 621 41
How Much Instruction in Farm Machinery.

NEW HAMPSHIRE STATE DEPT. OF EDUCATION, CONCORD
VT 000 474 ED 018 536 86
Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.

NEW HAMPSHIRE UNIV., DURHAM. DEPT. OF AGRICULTURAL EDUCATION
VT 000 474 ED 018 536 86
Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.

NEW JERSEY STATE DEPT. OF EDUCATION, TRENTON
VT 001 618 ED 018 600 105
A Plan for an Employment Orientation Program for Retarded Pupils in Public Schools in New Jersey.

NEW JERSEY STATE DEPT. OF EDUCATION, TRENTON. DIV. OF VOCATIONAL EDUCATION
VT 000 557 ED 018 540 4
A Guide for Part-Time Cooperative Education Programs.
VT 001 030 ED 018 555 9
Technical Education.

Page

NEW YORK CITY UNIV., N.Y. DIV. OF TEACHER EDUCATION
VT 004 635 ED 017 714 124
The Vocabulary of Instructional Materials for Typing and Stenographic Training.

NEW YORK STATE COLL. OF AGRICULTURE, ITHACA
VT 000 083 ED 018 530 168
Teaching Agricultural Mechanics in High School.

NEW YORK STATE COLL. OF AGRICULTURE, ITHACA. AGRICULTURAL EDUCATION DIV.
VT 000 042 ED 017 619 132
North Atlantic Regional Research Conference in Agricultural Education.
VT 000 043 ED 017 620 2
The Organization and Utilization of Agricultural Advisory Boards in New York State.

NEW YORK STATE EDUCATION DEPT., ALBANY. BUREAU OF AGRICULTURAL EDUCATION
VT 000 474 ED 018 536 86
Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.

NEW YORK STATE EDUCATION DEPT., ALBANY. DIV. OF VOCATIONAL REHABILITATION
VT 004 092 ED 015 314 114
Vocational Readiness for Young Disabled Students in New York City.

NOLL, ROBERT F.
VT 001 269 97
Safety in the Drafting Room.

NORGREN, PAUL H.
VT 004 111 ED 015 324 75
Obsolescence and Updating of Engineers' and Scientists' Skills.

NORTH CAROLINA AGRICULTURAL EXPERIMENT STATION, RALEIGH
VT 001 840 ED 017 654 169
Programmed Learning in Extension Training.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

NORTH CAROLINA EMPLOYMENT SECURITY COMMISSION, RALEIGH. JOB MARKET RESEARCH CENTER.
VT 003 682 ED 014 586 138
A Study of Relationships Between the Employment Service Active File and Unemployment, Greensboro - High Point Area.

NORTH CAROLINA STATE BOARD OF EDUCATION, RALEIGH. DEPT. OF COMMUNITY COLLEGES.
VT 001 120 33
Agricultural Technology, Agricultural Equipment.

NORTH CAROLINA STATE BOARD OF EDUCATION, RALEIGH. VOCATIONAL-TECHNICAL DIV.
VT 004 490 ED 017 707 45
Dental Hygiene Manual, Guide for a Two-Year Post High School Curriculum.

NORTH CAROLINA STATE UNIV., RALEIGH. CENTER FOR OCCUPATIONAL EDUCATION
VT 003 260 ED 015 263 65
National Vocational-Technical Education Seminar on Occupational Mobility and Migration.

NORTHERN ARIZONA UNIV., FLAGSTAFF
VT 004 095 ED 012 930 115
The Cooperative Program for Rehabitation of the Disabled Indian.
VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.
VT 004 161 MP 000 339 118
The Cooperative Program for Rehabilitation of the Disabled Indian. Summary.

OCCUPATIONAL INFORMATION AND VOCATIONAL GUIDANCE CONFERENCE
VT 001 460 ED 018 580 148
What Kinds of Occupational Information Do Students Need.

O'CONNELL, EDWARD J.
VT 002 545 122
1966 Farm Business Management Report and Individual Farm Business Analysis Guide.

O'DELL, EARL DOUGLAS
VT 001 594 ED (See Sep '68 RIE) 15
A Study of the Educational Needs of Adults in Wyoming.

Page

OFFICE OF ECONOMIC OPPORTUNITY, WASHINGTON, D.C.
VT 004 100 ED 015 320 73
The Unemployed and the Underemployed.

OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
VT 002 023 158
Distributive Education for Adults, Selection and Training of Part-Time Instructors.
VT 002 908 ED 017 667 18
Industrial Arts Education.
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C. AGRICULTURAL EDUCATION BRANCH
VT 000 461 ED 018 535 132
Report of Research Coordination Conference on Agricultural Occupations.

OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C. AREA VOCATIONAL BRANCH
VT 002 442 ED 017 661 37
Mechanical Technology, Design and Production, Suggested Techniques for Determining Courses of Study in Vocational Education Programs.

OHIO STATE DEPT. OF EDUCATION, COLUMBUS
VT 004 696 26
Advisory Committees, "Selection and Use".

OHIO STATE DEPT. OF EDUCATION, COLUMBUS. DIV. OF GUIDANCE AND TESTING
VT 000 340 ED 018 533 144
A Report of the Student Vocational Interest Surveys in Ohio Schools, July 1964 to June 1965.

OHIO STATE DEPT. OF EDUCATION, COLUMBUS. TRADE AND INDUSTRIAL EDUCATION SERVICE
VT 000 773 ED 018 547 87
Occupational Competency Tests.
VT 004 295 ED 016 850 93
Development and Utilization of a National Vocational-Technical School Achievement Testing Program Using the Printing Trades as a Pilot Area.

Page

OHIO STATE UNIV., COLUMBUS
VT 004 696 26
Advisory Committees, "Selection and Use".

OHIO STATE UNIV., COLUMBUS. DEPT. OF AGRICULTURAL EDUCATION
VT 001 938 ED 016 781 157
A Role Analysis of the Beginning Teacher of Vocational Agriculture in Ohio.

OHIO STATE UNIV., COLUMBUS. NATIONAL CENTER FOR RESEARCH IN AGRICULTURAL EDUCATION
VT 000 461 ED 018 535 132
Report of Research Coordination Conference on Agricultural Occupations.

OHIO STATE UNIV., COLUMBUS. THE CENTER FOR RESEARCH AND LEADERSHIP DEVELOPMENT IN VOCATIONAL AND TECHNICAL EDUCATION
VT 000 205 156
The Role of Teacher Education Institutions, In-Service Programs.
VT 003 689 ED 016 823 22
Health Occupations Education Centers.
VT 004 939 ED 017 730 125
Educational Media in Vocational and Technical Education.
VT 005 744 ED (See Oct '68 RIE) 173
Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.
VT 005 745 ED (See Oct '68 RIE) 174
Microfiche Collection of Documents Reported in Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.

OKLAHOMA STATE UNIV., STILLWATER
VT 004 402 ED 017 686 161
An Exploratory Analysis of the Roles and Role Conflicts of Vocational Teachers in Oklahoma.

OKLAHOMA STATE UNIV., STILLWATER. DEPT. OF AGRICULTURAL EDUCATION
VT 001 261 156
An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents.

Page

OKLAHOMA STATE UNIV., STILLWATER. RESEARCH FOUNDATION
VT 000 400 ED 017 625 32
Preparing Students for Employment in Agriculture.

OKLAHOMA VOCATIONAL RESEARCH COORDINATING UNIT, STILLWATER
VT 001 261 156
An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents.
VT 003 823 ED 016 828 139
Continuation of Research Coordinating Unit for Vocational Education in Oklahoma.

OLIVER, ALVIN E.
VT 003 946 ED 014 616 42
Post-High School Curriculum for the Grain, Feed, Seed and Farm Supply Industry.

OLIVO, C. THOMAS
VT 005 036 ED 016 871 153
Research Visibility. Vocational Education Is People--High School Age Youth.
VT 005 038 ED 016 873 29
Research Visibility. Vocational Education Is People with Educational Needs Beyond the High School.

OMAHA BOARD OF EDUCATION, NEBRASKA
VT 001 274 ED 017 648 10
A Look at Education for Work in the Omaha Public Schools.

OREGON STATE DEPT. OF EDUCATION, SALEM. DIV. OF COMMUNITY COLLEGES AND VOCATIONAL EDUCATION
VT 000 934 ED 017 639 96
Planning Vocational Agricultural Facilities.

OREGON STATE UNIV., CORVALLIS
VT 000 934 ED 017 639 96
Planning Vocational Agricultural Facilities.

ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, PARIS (FRANCE). MANPOWER DIVISION
VT 000 873 ED 018 550 6
The Training of Skilled Workers.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

ORUM, EARL
VT 000 022 ED 014 266 48
A Study of the Need for Technician Training in Agriculture and Welding at Yuba College.

OVERS, ROBERT P.
VT 004 329 ED 015 333 81
Sociological Studies of Occupations, A Bibliography.

PADFIELD, HARLAND
VT 004 234 ED 016 115 76
Farmers, Workers, and Machines.

PAIK, GEORGE AND OTHERS
VT 004 062 ED 016 101 111
The Remotivation of Chronic Schizophrenic Men Patients.

PALLONE, NATHANIEL J.
VT 004 314 ED 015 328 119
No Longer Superfluous.

PARRISH, EDWIN H.
VT 001 274 ED 017 648 10
A Look at Education for Work in the Omaha Public Schools.

PELLEY, ALBERT L.
VT 002 908 ED 017 667 18
Industrial Arts Education.

PENNSYLVANIA STATE DEPT. OF PUBLIC INSTRUCTION, HARRISBURG
VT 001 235 ED 017 645 88
Business Education Standards.
VT 002 019 37
Activating a Nutritional Education Program in Pennsylvania Schools.

PENNSYLVANIA STATE DEPT. OF PUBLIC INSTRUCTION, HARRISBURG. AGRICULTURAL EDUCATION SECTION
VT 001 391 ED 018 571 89
Instrument for Evaluating a Department of Vocational Agriculture.

PENNSYLVANIA STATE UNIV., UNIVERSITY PARK
VT 001 365 ED 016 044 157
Trade and Technical Teacher's Opinions on Inservice Education.
VT 004 451 ED 015 347 172
Abstracts of Research Studies in Agricultural Education Compiled in 1965-66 in the North Atlantic Region.

Page

PENNSYLVANIA STATE UNIV., UNIVERSITY PARK. DEPT. OF AGRICULTURAL EDUCATION
VT 001 391 ED 018 571 89
Instrument for Evaluating a Department of Vocational Agriculture.
VT 004 451 ED 015 347 172
Abstracts of Research Studies in Agricultural Education Compiled in 1965-66 in the North Atlantic Region.

PENNSYLVANIA STATE UNIV., UNIVERSITY PARK. DEPT. OF INDUSTRIAL EDUCATION
VT 000 943 ED 017 640 145
Developing Proper Attitudes Toward Eye Protection in the School Shop.

PETERS, G.F.
VT 002 646 38
Technical Illustration, Guide for Administrators, Instructors, and Students.

PETERSON, CLARENCE E.
VT 002 442 ED 017 661 37
Mechanical Technology, Design and Production, Suggested Techniques for Determining Courses of Study in Vocational Education Programs.

PHIPPS, LLOYD J. AND OTHERS
VT 003 674 ED (See Sep '68 RIE) 42
Education Regarding Credit for Agricultural Production. Report no. 2, Survey of Teachers of Agriculture.

POKORNY, HARRY
VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.

PRICE, CORA N.
VT 000 519 ED 017 627 96
Space and Equipment in Homemaking Education.

PUBLIC HEALTH SERVICE, ARLINGTON, VA. DIV. OF HEALTH MANPOWER EDUCATIONAL SERVICES
VT 000 331 ED 017 624 3
Allied Health Professions Educational Improvement Grants.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

PUBLIC HEALTH SERVICE, WASHINGTON, D.C. BUREAU OF HEALTH MANPOWER
VT 004 057 ED 016 835 72
Education for the Allied Health Professions and Services.

PURDUE UNIV., LAFAYETTE, INDIANA. MEASUREMENT AND RESEARCH CENTER
VT 004 593 ED 016 865 164
The Special Contribution of the College Home Economics Education Supervisor to the Student Teaching Situation.

RAJAN, G. SOUNDARA
VT 003 431 ED 014 020 66
A Study of the Registered Apprenticeship Program in Wisconsin.

RESEARCH COORDINATION CONFERENCE ON AGRICULTURAL OCCUPATIONS
VT 000 461 ED 018 535 132
Report of Research Coordination Conference on Agricultural Occupations.

RESEARCH TRAINING INST., DENVER, COLORADO
VT 002 121 ED 017 658 137
Research in Vocational Education.

RICHMAN, ROBERT W.
VT 001 641 150
High School Vocational Interest Survey in Canyon County.

RODGERS, JOHN H.
VT 001 188 ED 018 559 56
Occupations of South Carolina's Vocational Agriculture Students Completing a Prescribed Course, 1959-63.

ROGERS, EVERETT M.
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

ROSENFELD, MICHAEL
VT 003 702 ED 016 824 93
An Evaluation Plan for the Greene Joint Vocational School.

ROTZ, PATRICIA H.
VT 000 681 ED 017 631 6
The Employment Aspect of Home Economics Education.

Page

RYSCAVAGE, PAUL M.
VT 003 877 MP 000 286 70
Changes in Occupational Employment Over the Past Decade.

SAINT CLOUD AREA VOCATIONAL-TECHNICAL SCHOOL, MINN. DEPT. OF AGRICULTURE
VT 002 545 122
1966 Farm Business Management Report and Individual Farm Business Analysis Guide.

SAINT MARY'S DOMINICAN COLL., NEW ORLEANS, LOUISIANA
VT 004 089 ED 015 311 114
Secretarial Training with Speech Improvement.

SAN FERNANDO VALLEY STATE COLL., NORTHRIDGE. BUREAU OF BUSINESS SERVICES AND RESEARCH
VT 001 860 17
Real Estate Education and Research Needs in the San Fernando Valley.

SAN JOSE STATE COLL., CALIFORNIA. CENTER FOR INTERDISCIPLINARY STUDIES
VT 004 106 ED 016 103 74
A Study of the Re-Employment and Unemployment Experiences of Scientists and Engineers Laid Off from 62 Aero-Space and Electronics Firms in the San Francisco Bay Area During 1963-65.

SANTA CRUZ COUNTY BOARD OF EDUCATION, CALIFORNIA
VT 001 597 ED 018 597 90
Santa Cruz County Schools Student Follow-Up Survey.

SCANLON, JAMES ARNOLD
VT 002 889 ED 013 538 169
The Relative Effectiveness of Supplementing Programed Instruction with Blocked Versus Spaced Review.

SCHAEFER, CARL J. AND OTHERS
VT 000 943 ED 017 640 145
Developing Proper Attitudes Toward Eye Protection in the School Shop.

SCHILL, WILLIAM J.
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

SCHILTZ, MICHAEL E.
VT 004 327 ED 015 332 80
College, Color, and Employment.

SCHMITT, MARSHALL L.
VT 002 908 ED 017 667 18
Industrial Arts Education.

SCHULTZ, THEODORE W.
VT 001 471 ED 018 581 103
Investment in Poor People.

SCHWEITZER, S.O.
VT 003 880 MP 000 289 71
New Evidence on Problems of Reemployment.

SEATTLE PUBLIC SCHOOLS, WASHINGTON
VT 003 666 ED 014 581 108
Handicapped Youth Experimental Training Fund.

SEEFER, RICHARD G.
VT 004 326 ED 015 331 80
Unused Manpower, the Nation's Loss.

SEMINAR ON MANPOWER POLICY AND PROGRAM
VT 001 471 ED 018 581 103
Investment in Poor People.

SEVERINSEN, K. NORMAN
VT 004 178 ED 015 042 151
Vocational-Educational Information Workshop for Rural Guidance Workers.

SHEPPARD, HAROLD L.
VT 004 260 ED 016 128 78
The Job Hunt.

SHERARD, AUSTELL O.
VT 004 855 ED 017 727 28
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education.

SILVERMAN, LESLIE J.
VT 003 663 MP 000 201 107
Follow-Up Study of MDTA E and D Project at North Carolina A and T State College.

SIMPSON, ELIZABETH
VT 003 057 ED 017 676 40
Toward the Improvement of Family Life Through Education.

Page

SMITH, WENDELL LEE
VT 001 261 156
An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents.

SOUTH BEND COMMUNITY SCHOOL CORP., INDIANA
VT 004 314 ED 015 328 119
No Longer Superfluous.

SOUTH CAROLINA UNIV., COLUMBIA. BUREAU OF BUSINESS AND ECONOMIC RESEARCH
VT 003 822 MP 000 242 68
Research on the Measurement of Job Vacancies for Domestic Workers.

SOUTH DAKOTA STATE DEPT. OF PUBLIC INSTRUCTION, PIERRE. DIV. OF PUPIL PERSONNEL SERVICES
VT 001 008 ED 017 642 101
The South Dakota Secondary School Dropout Population, 1963-64.

SOUTHERN ILLINOIS UNIV., CARBONDALE. SCHOOL OF AGRICULTURE
VT 000 667 ED 018 543 87
An Evaluation of Illinois Post-High School Educational Programs in Agriculture.

SPECTOR, JULES
VT 004 255 ED 016 127 77
Occupations in the Field of Library Science.

SPITZE, HAZEL TAYLOR
VT 003 036 64
Adult Education -- Preparation for Employment.

STANFORD RESEARCH INST., MENLO PARK, CALIFORNIA
VT 004 332 ED 016 141 83
Impacts of Technological Changes in Warehousing, Phase I.

STEIN, BRUNO
VT 004 330 ED 015 334 82
Local Manpower Data Programs.

STEVENSON, WILLIAM W.
VT 003 823 ED 016 828 139
Continuation of Research Coordinating Unit for Vocational Education in Oklahoma.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

STEWART, JEFFREY R., JR.
VT 003 255 ED 012 389 20
Pilot Programs in High Schools to Prepare Students for a Wide Spectrum of Computing, Recording, and Bookkeeping Occupations.

STOUFFER, CLAYTON L.
VT 002 371 ED 016 063 105
Preparacion, Progreso, Porvenir.

STURM, HERMAN M.
VT 002 385 ED 014 555 61
Technology and Manpower in the Health Service Industry, 1965-75.

SUTKER, SOLOMON AND OTHERS
VT 004 402 ED 017 686 161
An Exploratory Analysis of the Roles and Role Conflicts of Vocational Teachers in Oklahoma.

SUZIEDELIS, ANTANAS
VT 004 158 ED 016 110 118
Work Values of the Handicapped.

SWANSON, DONALD F.
VT 003 822 MP 000 242 68
Research on the Measurement of Job Vacancies for Domestic Workers.

SWANSON, J. CHESTER
VT 004 417 ED 016 858 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume One.
VT 004 418 ED 017 688 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume Two.

SYSTEM DEVELOPMENT CORPORATION, SANTA MONICA, CALIFORNIA
VT 004 528 ED 017 710 153
Exploratory Study of Information--Processing Procedures and Computor-Based Technology in Vocational Counseling.

TENNESSEE STATE DEPT. OF EDUCATION, NASHVILLE. TRADE AND INDUSTRIAL SERVICE
VT 000 669 5
Industrial Cooperative Training Programs.

Page

TEXAS STATE DEPT. OF HEALTH, AUSTIN. DIV. OF OCCUPATIONAL HEALTH AND RADIATION CONTROL
VT 001 236 96
Standards for Eye Protection in Public Schools.

TEXAS STUDY OF SECONDARY EDUCATION, AUSTIN
VT 001 402 ED 018 572 102
A Study of Dropouts in Texas and Minnesota.

TEXAS TECHNOLOGICAL COLL., LUBBOCK. DEPT. OF AGRICULTURAL EDUCATION
VT 000 682 ED 017 632 133
Proceedings of Annual Southern Regional Research Conference, Agricultural Education.

TEXAS UNIV., AUSTIN. DEPT. OF ECONOMICS
VT 004 310 ED 015 327 78
Negro Participation in Apprenticeship Programs.

THOMPSON, JOHN T.
VT 001 594 ED (See Sep '68 RIE) 15
A Study of the Educational Needs of Adults in Wyoming.

TODD, HOLLIS E.
VT 001 938 ED 016 781 157
A Role Analysis of the Beginning Teacher of Vocational Agriculture in Ohio.

TOM, FREDERICK K.T.
VT 002 889 ED 013 538 169
The Relative Effectiveness of Supplementing Programed Instruction with Blocked Versus Spaced Review.

TOMLINSON, ROBERT M. AND OTHERS
VT 000 868 ED 013 645 51
Practical Nursing in Illinois.

TRAPNELL, GAIL
VT 000 982 ED 011 091 8
Organization and Operation of Distributive Education Programs for Adults.

TRENTON STATE COLL., N.J. DEPT. OF INDUSTRIAL EDUCATION AND TECHNOLOGY
VT 000 557 ED 018 540 4
A Guide for Part-Time Cooperative Education Programs.

Page

TUSKEGEE INSTITUTE, ALABAMA
VT 004 855 ED 017 727 28
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES. SCHOOL OF EDUCATION
VT 002 026 ED 016 784 91
Secondary Students' Mathematics Competencies in Relation to Employment Tests.

UPJOHN (W.E.) INST. FOR EMPLOYMENT RESEARCH, KALAMAZOO, MICHIGAN
VT 004 260 ED 016 128 78
The Job Hunt.

UTAH RESEARCH COORDINATING UNIT FOR VOCATIONAL AND TECHNICAL EDUCATION, SALT LAKE CITY
VT 004 932 ED 017 728 28
The Qualifications and Professional Responsibilities of Vocational Directors at the Local District Level in the State of Utah.

UTAH STATE BOARD OF EDUCATION, SALT LAKE CITY, RESEARCH DIV.
VT 000 895 ED 018 551 88
The Status of and Need for Industrial Education in the Public Secondary Schools in Utah.

VANDER GRIEND, MAURINE
VT 000 519 ED 017 627 96
Space and Equipment for Homemaking Education.

VAUGHN, GWENYTH R.
VT 004 082 ED 015 306 112
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing.
VT 004 083 MP 000 308 113
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing. Summary.

VIRGINIA POLYTECHNIC INST., BLACKSBURG
VT 003 255 ED 012 389 20
Pilot Programs in High Schools to Prepare Students for a Wide Spectrum of Computing, Recording, and Bookkeeping Occupations.

Page

VIRGINIA POLYTECHNIC INST., BLACKSBURG. DISTRIBUTIVE EDUCATION DIV.
VT 002 897 ED 017 665 159
Survey of Practices for College Distributive Education and Retailing Occupational Experience Programs.

VIRGINIA STATE BOARD OF EDUCATION, RICHMOND. DIV. OF EDUCATIONAL RESEARCH
VT 001 516 ED 018 586 103
Virginia Secondary School Dropouts, 1962-63.

VIRGINIA STATE COLL., NORFOLK DIV.
VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decisions to Forego Retraining Under Manpower Development and Training Act of 1962.

VOELCKER, PAULINE
VT 003 057 ED 017 676 40
Toward the Improvement of Family Life Through Education.

WAKEFIELD, JOSEPH C.
VT 003 879 MP 000 288 70
Employment Effect of State and Local Government Spending.

WALL, LEWIS E.
VT 004 484 ED 016 861 163
A Study of the Effectiveness of Data Processing Summer Institutes for Business Teachers.

WARNER, AARON W.
VT 004 111 ED 015 324 75
Obsolescence and Updating of Engineers' and Scientists' Skills.

WASHINGTON STATE BOARD FOR VOCATIONAL EDUCATION, OLYMPIA
VT 000 779 ED 016 770 122
Transparency Masters for Agricultural Education...Interim Report.

WASHINGTON STATE UNIV., PULLMAN. DEPT. OF EDUCATION
VT 000 779 ED 016 770 122
Transparency Masters for Agricultural Education...Interim Report.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

WASHINGTON UNIV., SAINT LOUIS, MO.
VT 001 399 ED (See Sep '68 RIE) 101
Workshop for Counselors and Educators Concerned with the Education, Training and Employment of Minority Youth.

WAYNE STATE UNIV., DETROIT, MICH. DEPT. OF BUSINESS AND DISTRIBUTIVE EDUCATION
VT 001 453 ED 018 578 60
The Need for In-School Business Data Processing Programs.
VT 001 484 ED 017 653 97
Office Machines Used in Business Today.

WEBB, EARL
VT 000 682 ED 017 632 133
Proceedings of Annual Southern Regional Research Conference, Agricultural Education.

WENRICH, RALPH C.
VT 000 672 ED 017 629 5
The Need for Area Vocational Schools in Mighigan.

WEST, LEONARD J.
VT 004 635 ED 017 714 124
The Vocabulary of Instructional Materials for Typing and Stenographic Training.

WEST VIRGINIA RESEARCH COORDINATING UNIT FOR VOCATIONAL EDUCATION, HUNTINGTON
VT 004 940 ED 017 731 142
Procedural Guide for Writing of Proposals.

WEST VIRGINIA STATE DEPT. OF EDUCATION, CHARLESTON
VT 004 940 ED 017 731 142
Procedural Guide for Writing of Proposals.

WEST VIRGINIA UNIV., MORGANTOWN
VT 004 836 ED 017 723 27
Study of Industrial Arts Education in Public Secondary Schools of the Southern Appalachian Region.

WESTERN ILLINOIS UNIV., MACOMB
VT 004 178 ED 015 042 151
Vocational-Educational Information Workshop for Rural Guidance Workers.

Page

WHITELEY, JOHN M.
VT 001 399 ED (See Sep '68 RIE) 101
Workshop for Counselors and Educators Concerned with the Education, Training and Employment of Minority Youth.

WHITMARSH, RUTH
VT 000 681 ED 017 631 6
The Employment Aspect of Home Economics Education.
VT 001 387 ED 018 570 12
Opinions of City Home Economics Supervisors on the Employment Emphasis in Home Economics Education at the Secondary Level.

WIENTGE, KING M.
VT 001 399 ED (See Sep '68 RIE) 101
Workshop for Counselors and Educators Concerned with the Education, Training and Employment of Minority Youth.

WILLSON, RICHARD
VT 002 941 ED 016 802 39
Research to Establish a College-Level Curriculum in Glass.

WINEFORDNER, DAVID
VT 000 340 ED 018 533 144
A Report of the Student Vocational Interest Surveys in Ohio Schools, July 1964 to June 1965.

WIRTZ, W. WILLARD
VT 000 959 ED 018 554 8
Report of the Secretary of Labor on Manpower Research and Training.

WISCONSIN ASSN. OF VOCATIONAL AGRICULTURE INSTRUCTORS, MADISON. COURSE OF STUDY COMMITTEE
VT 000 586 ED 017 628 33
The Development of a Modern Curriculum in Vocational Agriculture.

WISCONSIN STATE BOARD OF VOCATIONAL AND ADULT EDUCATION, MADISON
VT 000 586 ED 017 628 33
The Development of a Modern Curriculum in Vocational Agriculture.

WISCONSIN UNIV., MADISON
VT 004 259 ED 016 849 151
A Study of the Influences of the Father's Job and Social Status on the Occupational and Social Goals of Youth.

PERSONAL AND INSTITUTIONAL AUTHORS INDEX

Page

WISCONSIN UNIV., MADISON. CENTER FOR STUDIES IN VOCATIONAL AND TECHNICAL EDUCATION
VT 003 431 ED 014 020 66
A Study of the Registered Apprenticeship Program in Wisconsin.

WISCONSIN UNIV., MADISON. DEPT. OF AGRICULTURAL AND EXTENSION EDUCATION
VT 000 586 ED 017 628 33
The Development of a Modern Curriculum in Vocational Agriculture.

WOOD, EUGENE S.
VT 000 667 ED 018 543 87
An Evaluation of Illinois Post-High School Educational Programs in Agriculture.

WOODIN, RALPH J.
VT 001 938 ED 016 781 157
A Role Analysis of the Beginning Teachers of Vocational Agriculture in Ohio.

WYLLIE, EUGENE DONALD
VT 004 335 ED 016 851 94
An Evaluation Plan for Business Education Programs in High Schools.

WYOMING UNIV., LARAMIE. DIV. OF ADULT EDUCATION AND COMMUNITY SERVICE
VT 001 594 ED (See Sep '68 RIE) 15
A Study of the Educational Needs of Adults in Wyoming.

YENCSO, WILLIAM R.
VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.

YUBA COLL., MARYSVILLE, CALIF.
VT 000 022 ED 014 266 48
A Study of the Need for Technician Training in Agriculture and Welding at Yuba College.

ZURBRICK, PHILLIP R.
VT 001 381 ED 016 046 34
The Status of Specialized Courses in Vocational Agriculture.

VOCATIONAL AND SUPPORTING SERVICES INDEX

Page

AGRICULTURAL EDUCATION

VT 000 022 ED 014 266 48
A Study of the Need for Technician Training in Agriculture and Welding at Yuba College.

VT 000 042 ED 017 619 132
North Atlantic Regional Research Conference in Agricultural Education.

VT 000 043 ED 017 620 2
The Organization and Utilization of Agricultural Advisory Boards in New York State.

VT 000 083 ED 018 530 168
Teaching Agricultural Mechanics in High School.

VT 000 103 ED 018 532 2
Developing Programs in Agricultural Occupations.

VT 000 177 ED 017 621 48
Determination of Educational Needs of Selected Job Titles in Farm Implement Businesses in Oklahoma.

VT 000 219 ED 017 623 49
Employment Opportunities and Usable Agricultural Skills in Non-Farm Agricultural Occupations in Appalachia.

VT 000 400 ED 017 625 32
Preparing Students for Employment in Agriculture.

VT 000 429 ED 018 534 32
A Study of Education Regarding Cooperative Organizations in Rural Areas in 118 Illinois High Schools.

VT 000 461 ED 018 535 132
Report of Research Coordination Conference on Agricultural Occupations.

VT 000 474 ED 018 536 86
Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.

VT 000 546 ED 018 538 50
Occupational Opportunities and Training Needs for Non-Farm Agricultural Jobs in the Metropolitan Areas of Louisiana.

VT 000 555 ED 018 539 86
An Instrument for Use in the Self Evaluation of State Staff Supervisory Programs in Agriculture Education.

VT 000 562 ED 018 541 50
A Study of Employment Opportunities in Off-Farm Agricultural Occupations in Alabama.

Page

VT 000 586 ED 017 628 33
The Development of a Modern Curriculum in Vocational Agriculture.

VT 000 667 ED 018 543 87
An Evaluation of Illinois Post-High School Educational Programs in Agriculture.

VT 000 682 ED 017 632 133
Proceedings of Annual Southern Regional Research Conference, Agricultural Education.

VT 000 779 ED 016 770 122
Transparency Masters for Agricultural Education...Interim Report.

VT 000 896 ED 017 636 53
Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts.

VT 000 934 ED 017 639 96
Planning Vocational Agricultural Facilities.

VT 001 120 33
Agricultural Technology, Agricultural Equipment.

VT 001 188 ED 018 559 56
Occupations of South Carolina's Vocational Agriculture Students Completing a Prescribed Course, 1959-63.

VT 001 202 ED 017 644 57
A Study of Non-Farm Agricultural Occupations in Kansas.

VT 001 206 ED 018 560 9
Vocational Agriculture in Transition for Occupational Education.

VT 001 261 156
An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents.

VT 001 264 ED 016 042 89
An Evaluation of the Farm Labor Supervisor Training Program in California.

VT 001 381 ED 016 046 34
The Status of Specialized Courses in Vocational Agriculture.

VT 001 391 ED 018 571 89
Instrument for Evaluating a Department of Vocational Agriculture.

VT 001 410 ED 017 652 59
Agricultural Occupations Other than Farming in Missouri.

VT 001 414 ED 018 573 60
Competencies Needed by Employees in Agricultural-Supply Businesses--Sales and Service.

VOCATIONAL AND SUPPORTING SERVICES INDEX

Page

VT 001 714 ED 016 053 16
Handbook for Developing and Operating Agricultural Occupations Programs.

VT 001 840 ED 017 654 169
Programmed Learning in Extension Training.

VT 001 846 ED 016 056 137
Research Conference in Agricultural Education.

VT 001 938 ED 016 781 157
A Role Analysis of the Beginning Teacher of Vocational Agriculture in Ohio.

VT 002 545 122
1966 Farm Business Management Report and Individual Farm Business Analysis Guide.

VT 002 881 ED 016 797 63
Manpower Requirements and Demand in Agriculture by Regions and Nationally, with Estimation of Vocational Training and Educational Needs and Productivity.

VT 002 889 ED 013 538 169
The Relative Effectiveness of Supplementing Programed Instruction with Blocked Versus Spaced Review.

VT 003 621 41
How Much Instruction in Farm Machinery.

VT 003 674 ED 018 638 42
Education Regarding Credit for Agricultural Production. Report no. 2, Survey of Teachers of Agriculture.

VT 003 946 ED 014 616 42
Post-High School Curriculum for the Grain, Feed, Seed and Farm Supply Industry.

VT 003 949 ED 015 300 43
Agricultural Education in the Community College.

VT 003 950 ED 015 301 44
What Does it Take to Sell Feed.

VT 004 449 ED 015 345 172
Abstracts of Research Studies in Agricultural Education Completed in 1963-64 in the North Atlantic Region.

VT 004 451 ED 015 347 172
Abstracts of Research Studies in Agricultural Education Compiled in 1965-66 in the North Atlantic Region.

VT 004 557 ED 018 654 124
Level of Accounts and Records in Relation to Business and Personal Characteristics of Farmers in Agricultural Education.

Page

VT 004 660 ED 016 867 164
University of Illinois Summer Institute for Teachers of Ornamental Horticulture in the Midwestern Section of the United States.

BUSINESS AND OFFICE EDUCATION

VT 000 871 ED 018 549 52
Industry Wage Survey--Banking, November-December 1964.

VT 000 959 ED 018 554 8
Report of the Secretary of Labor on Manpower Research and Training.

VT 001 235 ED 017 645 88
Business Education Standards.

VT 001 331 ED 018 563 58
Selected Entry Office Jobs for the High School Student.

VT 001 332 ED 018 564 34
Office Occupation Programs Under the Vocational Education Act of 1963.

VT 001 452 ED 018 577 135
The Proceedings of the DPE (Research Training) Conference.

VT 001 453 ED 018 578 60
The Need for In-School Business Data Processing Programs.

VT 001 484 ED 017 653 97
Office Machines Used in Business Today.

VT 001 598 ED 018 598 36
Sample Business Education Training Plans Conducted Under Manpower Development and Training Programs.

VT 002 352 ED 016 062 61
Occupations in Electronic Computing Systems.

VT 003 255 ED 012 389 20
Pilot Programs in High Schools to Prepare Students for a Wide Spectrum of Computing, Recording, and Bookkeeping Occupations.

VT 004 089 ED 015 311 114
Secretarial Training with Speech Improvement.

VT 004 335 ED 016 851 94
An Evaluation Plan for Business Education Programs in High Schools.

VT 004 397 ED 016 856 170
The Effect of Emphasizing Production Typewriting, Contrasted with Speed Typewriting in Developing Production Typewriting Ability.

VT 004 484 ED 016 861 163
A Study of the Effectiveness of Data Processing Summer Institutes for Business Teachers.

VOCATIONAL AND SUPPORTING SERVICES INDEX

Page

VT 004 635 ED 017 714 124
The Vocabulary of Instructional Materials for Typing and Stenographic Training.

DISTRIBUTIVE EDUCATION
VT 000 982 ED 011 091 8
Organization and Operation of Distributive Education Programs for Adults.
VT 002 023 158
Distributive Education for Adults, Selection and Training of Part-Time Instructors.
VT 002 897 ED 017 665 159
Survey of Practices for College Distributive Education and Retailing Occupational Experience Programs.
VT 004 696 26
Advisory Committees, "Selection and Use".

HEALTH OCCUPATIONS EDUCATION
VT 000 331 ED 017 624 3
Allied Health Professions Educational Improvement Grants.
VT 000 678 ED 017 630 6
Associate in Applied Science in Nursing.
VT 000 868 ED 013 645 51
Practical Nursing in Illinois.
VT 001 892 ED 017 656 150
Pathways to Health Careers.
VT 002 385 ED 014 555 61
Technology and Manpower in the Health Service Industry, 1965-75.
VT 003 226 65
Manpower Requirements in Indiana Hospitals.
VT 003 662 MP 000 200 21
Child Day Care Service Needs.
VT 003 689 ED 016 823 22
Health Occupations Education Centers.
VT 004 057 ED 016 835 72
Education for the Allied Health Professions and Services.
VT 004 265 MP 000 366 23
Summary Report for the Year Ending June, 1967.
VT 004 396 ED 011 709 119
Occupations in the Care and Rehabilitation of the Mentally Retarded.
VT 004 486 25
Requirements for Approval of Educational Programs for Dental Assistants.
VT 004 490 ED 017 707 45
Dental Hygiene Manual, Guide for a Two-Year Post High School Curriculum.

Page

HOME ECONOMICS EDUCATION
VT 000 205 156
The Role of Teacher Education Institutions, In-Service Programs.
VT 000 519 ED 017 627 96
Space and Equipment for Homemaking Education.
VT 000 670 ED 018 544 128
A New Look at the Vocational Purposes of Home Economics Education.
VT 000 681 ED 017 631 6
The Employment Aspect of Home Economics Education.
VT 000 684 ED 018 546 100
Working with Low-Income Families.
VT 000 685 ED 017 633 145
Educating the Teen-Ager in Human Relations and Management of Resources.
VT 001 387 ED 018 570 12
Opinions of City Home Economics Supervisors on the Employment Emphasis in Home Economics Education at the Secondary Level.
VT 001 428 ED 016 047 90
A Study of the Practical Nursing Programs in Vermont.
VT 001 454 ED 018 579 13
Pilot Training Program for Supervised Worker in Child Development Center.
VT 001 690 16
Essentials and Requirements of a Vocational Home Economics Program.
VT 001 907 17
Pilot Training Programs in Home Economics.
VT 002 019 37
Activating a Nutritional Education Program in Pennsylvania Schools.
VT 003 036 64
Adult Education -- Preparation for Employment.
VT 003 057 ED 017 676 40
Toward the Improvement of Family Life Through Education.
VT 003 308 ED 016 074 123
Development of a Film on Homemaker Services.
VT 004 365 ED 016 854 44
Hospitality Education Curriculum Development Project.
VT 004 483 ED 016 860 162
Evaluation of Student Teaching in Home Economics.
VT 004 593 ED 016 865 164
The Special Contribution of the College Home Economics Education Supervisor to the Student Teaching Situation.

Page

VT 004 638 ED 015 734 25
Guidelines for Hospitality Education in Junior Colleges.

INDUSTRIAL ARTS EDUCATION

VT 000 910 ED 018 552 100
Industrial Arts and High School Dropouts.

VT 001 269 97
Safety in the Drafting Room.

VT 002 552 ED (See Sep '68 RIE) 129
Industrial Arts and Technology, Past, Present, and Future.

VT 002 895 ED 017 664 98
A Guide for Equipping Industrial Arts Facilities.

VT 002 908 ED 017 667 18
Industrial Arts Education.

VT 002 954 ED 016 069 39
Curricular Considerations, Oswego.

VT 003 593 ED 017 678 129
Developing Human Potential through Industrial Arts.

VT 003 612 ED 018 636 138
Federal Aid for Industrial Arts.

VT 003 680 ED 014 585 92
Validity Extension Data on the General Aptitude Test Battery.

VT 004 836 ED 017 723 27
Study of Industrial Arts Education in Public Secondary Schools of the Southern Appalachian Region.

LABOR ECONOMICS

VT 000 865 ED 017 634 51
Automation.

VT 000 973 ED 017 641 133
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.

VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decisions to Forego Retraining Under Manpower Development and Training Act of 1962.

VT 001 471 ED 018 581 103
Investment in Poor People.

VT 001 533 MP 000 107 104
Job Corps Enrollee Applicant Medical Record Analysis and Screening.

VT 002 910 ED 017 669 63
A Directory of Community Wage Surveys, 1948-June 1965.

VT 003 682 ED 014 586 138
A Study of Relationships Between the Employment Service Active File and Unemployment, Greensboro - High Point Area.

Page

VT 003 822 MP 000 242 68
Research on the Measurement of Job Vacancies for Domestic Workers.

VT 003 848 ED 015 290 68
Labor Force Projections by Color, 1970-80.

VT 003 858 MP 000 270 69
Job Vacancy Surveys.

VT 003 867 ED 014 614 110
Report on MDTA Institutional Training Program Developments.

VT 003 877 MP 000 286 70
Changes in Occupational Employment Over the Past Decade.

VT 003 879 MP 000 288 70
Employment Effect of State and Local Government Spending.

VT 003 880 MP 000 289 71
New Evidence on Problems of Reemployment.

VT 003 959 ED 017 679 71
Symposium on Forecasting of Manpower Requirements.

VT 004 086 ED 015 308 73
The Negro and Equal Employment Opportunities.

VT 004 100 ED 015 320 73
The Unemployed and the Underemployed.

VT 004 159 ED 015 326 140
Evaluation of Changes in Skill-Profile and Job-Content Due to Technological Change.

VT 004 234 ED 016 115 76
Farmers, Workers, and Machines.

VT 004 309 ED 016 132 141
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.

VT 004 310 ED 015 327 78
Negro Participation in Apprenticeship Programs.

VT 004 311 ED 016 133 79
U.S. Census of Population, 1960. Subject Reports, Labor Reserve -- Age, Education, Occupation, and Other Characteristics of Former Members of the Labor Force.

VT 004 312 ED 016 134 160
Placement Services for College Teachers.

VT 004 313 ED 016 135 161
Academic Labor Markets.

VT 004 314 ED 015 328 119
No Longer Superfluous.

VT 004 317 ED 016 136 152
Counselor Development in American Society.

VOCATIONAL AND SUPPORTING SERVICES INDEX

Page

VT 004 326 ED 015 331 80
Unused Manpower, the Nation's Loss.
VT 004 330 ED 015 334 82
Local Manpower Data Programs.
VT 004 331 ED 016 140 82
Health Insurance Coverage for Workers on Layoff.
VT 004 384 ED 016 143 83
Manpower and the Growth of Producer Services.

OCCUPATIONAL PSYCHOLOGY
VT 003 820 ED 014 594 139
Follow-Up Techniques in a Large-Scale Test Validation Study.
VT 004 111 ED 015 324 75
Obsolescence and Updating of Engineers' and Scientists' Skills.
VT 004 158 ED 016 110 118
Work Values of the Handicapped.

OCCUPATIONAL SOCIOLOGY
VT 003 260 ED 015 263 65
National Vocational-Technical Education Seminar on Occupational Mobility and Migration.
VT 004 106 ED 016 103 74
A Study of the Re-Employment and Unemployment Experiences of Scientists and Engineers Laid Off from 62 Aero-Space and Electronics Firms in the San Francisco Bay Area During 1963-65.
VT 004 260 ED 016 128 78
The Job Hunt.
VT 004 327 ED 015 332 80
College, Color, and Employment.
VT 004 329 ED 015 333 81
Sociological Studies of Occupations, A Bibliography.

TECHNICAL EDUCATION
VT 000 022 ED 014 266 48
A Study of the Need for Technician Training in Agriculture and Welding at Yuba College.
VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.
VT 000 678 ED 017 630 6
Associate in Applied Science in Nursing.
VT 000 901 ED 017 637 53
Mathematical Expectations of Technicians in Michigan Industries.

Page

VT 001 030 ED 018 555 9
Technical Education.
VT 001 103 56
Graduate Follow-Up, 1964.
VT 001 120 33
Agricultural Technology, Agricultural Equipment.
VT 002 442 ED 017 661 37
Mechanical Technology, Design and Production, Suggested Techniques for Determining Courses of Study in Vocational Education Programs.
VT 002 646 38
Technical Illustration, Guide for Administrators, Instructors, and Students.
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.
VT 003 689 ED 016 823 22
Health Occupations Education Centers.
VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.
VT 004 262 ED 016 130 22
The Fluid Power Institutes Tested Procedures for Introducing Emerging Technologies, 1966.
VT 004 482 ED 016 859 123
Summer Institute, 1967.
VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.
VT 005 003 ED (See Sep '68 RIE) 126
Programming Exercises for Computer Aided Drafting.
VT 005 136 173
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.
VT 005 268 ED 017 743 45
Research Visibility. Vocational Education Is Service--Curriculum Development and Instructional Materials.
VT 005 744 ED (See Oct '68 RIE) 173
Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.
VT 005 745 ED (See Oct '68 RIE) 174
Microfiche Collection of Documents Reported in Abstracts of Research and Related Materials in Vocational and Technical Education, Summer, 1968

VOCATIONAL AND SUPPORTING SERVICES INDEX

Page

TRADE AND INDUSTRIAL EDUCATION

VT 000 669 5
Industrial Cooperative Training Programs.

VT 000 773 ED 018 547 87
Occupational Competency Tests.

VT 000 873 ED 018 550 6
The Training of Skilled Workers.

VT 000 943 ED 017 640 145
Developing Proper Attitudes Toward Eye Protection in the School Shop.

VT 001 030 ED 018 555 9
Technical Education.

VT 001 365 ED 016 044 157
Trade and Technical Teacher's Opinions on Inservice Education.

VT 002 646 38
Technical Illustration, Guide for Administrators, Instructors, and Students.

VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.

VT 004 254 ED 016 126 77
Start Your Career with Apprenticeship in Washington, D.C.

VT 004 262 ED 016 130 22
The Fluid Power Institutes Tested Procedures for Introducing Emerging Technologies, 1966.

VT 004 295 ED 016 850 93
Development and Utilization of a National Vocational-Technical School Achievement Testing Program Using the Printing Trades as a Pilot Area.

VT 004 482 ED 016 859 123
Summer Institute, 1967.

VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.

VT 004 855 ED 017 727 28
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education.

GENERAL VOCATIONAL AND TECHNICAL EDUCATION

VT 000 099 ED 018 531 172
A Bibliography of Published and Unpublished Vocational and Technical Education Literature.

Page

VT 000 178 ED 017 622 144
Report of the Vocational Guidance Seminars, Summer 1965.

VT 000 340 ED 018 533 144
A Report of the Student Vocational Interest Surveys in Ohio Schools, July 1964 to June 1965.

VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.

VT 000 557 ED 018 540 4
A Guide for Part-Time Cooperative Education Programs.

VT 000 672 ED 017 629 5
The Need for Area Vocational Schools in Michigan.

VT 000 895 ED 018 551 88
The Status of and Need for Industrial Education in the Public Secondary Schools in Utah.

VT 000 901 ED 017 637 53
Mathematical Expectations of Technicians in Michigan Industries.

VT 000 927 ED 017 638 7
Fact-Finding in Vocational Education.

VT 001 010 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts State-Aided Vocational Schools, Class of 1962.

VT 001 024 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts, State-Aided Vocational Schools, Class of 1964.

VT 001 033 55
Pattern for Progress, An Extension of the Blueprint for Action.

VT 001 089 ED 018 556 146
Leadership for Vocational Education in California.

VT 001 103 56
Graduate Follow-Up, 1964.

VT 001 125 ED 018 558 147
Counseling Girls and Women.

VT 001 207 ED 018 561 57
The Employment Situation of White and Negro Youth in the City of Baltimore.

VT 001 236 96
Standards for Eye Protection in Public Schools.

VT 001 244 ED 017 646 134
Detroit Study of the Effectiveness of High School Education for Entrance into the World of Work.

VOCATIONAL AND SUPPORTING SERVICES INDEX

Page

VT 001 274 ED 017 648 10
A Look at Education for Work in the Omaha Public Schools.

VT 001 313 ED 017 650 168
Liberal Orientations for Vocational Teaching.

VT 001 334 ED 018 565 135
Research Training Institute for Persons in Vocational Education Participating in Research and Development Activities.

VT 001 362 ED 018 567 58
Survey of Information on Vocational and Technical Education in the State of Illinois.

VT 001 364 ED 018 568 11
Leadership for Vocational Education in California (November, 1965).

VT 001 372 11
Vocational Education in California, 1964-65.

VT 001 392 35
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. First Quarterly Technical Report.

VT 001 393 36
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. Second Quarterly Technical Report, The Problem of Defining Objectives.

VT 001 399 ED (See Sep '68 RIE) 101
Workshop for Counselors and Educators Concerned with the Education, Training and Employment of Minority Youth.

VT 001 447 ED 018 576 12
Leadership for Vocational Education in California--January-February, 1966.

VT 001 460 ED 018 580 148
What Kinds of Occupational Information Do Students Need.

VT 001 486 ED (See Sep '68 RIE) 128
A Report on the Administrator's Conference on Vocational Education.

VT 001 511 ED 018 584 14
Guidelines for the Development of Merged Area Vocational Schools and Area Community Colleges by the Merged Area Boards.

VT 001 516 ED 018 586 103
Virginia Secondary School Dropouts, 1962-63.

Page

VT 001 541 ED 018 588 148
70,000 High School Seniors, Their Educational and Vocational Plans.

VT 001 556 ED 018 591 14
Report to the Congress of the United States, Review of Absences of Trainees Enrolled in Institutional Training Programs.

VT 001 573 ED 018 592 136
Report of a National Vocational-Technical Education Seminar on Research and Curriculum Development.

VT 001 594 ED (See Sep '68 RIE) 15
A Study of the Educational Needs of Adults in Wyoming.

VT 001 597 ED 018 597 90
Santa Cruz County Schools Student Follow-Up Survey.

VT 001 612 ED 018 599 149
Developing a Program of Student Personnel Services for Area Vocational-Technical Schools.

VT 001 641 150
High School Vocational Interest Survey in Canyon County.

VT 001 860 17
Real Estate Education and Research Needs in the San Fernando Valley.

VT 002 026 ED 016 784 91
Secondary Students' Mathematics Competencies in Relation to Employment Tests.

VT 002 121 ED 017 658 137
Research in Vocational Education.

VT 002 163 ED 016 785 18
Vocational Education in Utah.

VT 002 250 92
The Use of the Differential Aptitude Tests in Predicting Achievement in High School and College.

VT 002 371 ED 016 063 105
Preparacion, Progreso, Porvenir.

VT 002 442 ED 017 661 37
Mechanical Technology, Design and Production, Suggested Techniques for Determining Courses of Study in Vocational Education Programs.

VT 002 849 62
Job Training for the Mature Woman Entering or Reentering the Labor Force.

VT 002 944 ED 016 803 159
Review of Research in Vocational Technical Teacher Education.

VOCATIONAL AND SUPPORTING SERVICES INDEX

Page

VT 003 249 ED 017 677 19
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level.
VT 003 300 ED 016 810 66
Education and Vocational Training of TEC Claimants.
VT 003 361 ED 016 076 107
Survey of Terminees from Out-of-School NYC Projects.
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.
VT 003 431 ED 014 020 66
A Study of the Registered Apprenticeship Program in Wisconsin.
VT 003 522 ED 016 818 67
A Technique for Projection of Occupational-Educational Requirements for State Educational Planning Areas.
VT 003 585 ED 018 635 20
Position Statement on a National Manpower Policy.
VT 003 663 MP 000 201 107
Follow-Up Study of MDTA E and D Project at North Carolina A and T State College.
VT 003 666 ED 014 581 108
Handicapped Youth Experimental Training Fund.
VT 003 702 ED 016 824 93
An Evaluation Plan for the Greene Joint Vocational School.
VT 003 823 ED 016 828 139
Continuation of Research Coordinating Unit for Vocational Education in Oklahoma.
VT 003 854 ED 011 984 108
Action for Employment.
VT 003 855 ED 015 293 109
Summer Community Youth Work Program.
VT 004 092 ED 015 314 114
Vocational Readiness for Young Disabled Students in New York City.
VT 004 095 ED 012 930 115
The Cooperative Program for Rehabilitation of the Disabled Indian.
VT 004 114 MP 000 331 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone. Abstract.

Page

VT 004 115 ED 016 106 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone.
VT 004 161 MP 000 339 118
The Cooperative Program for Rehabilitation of the Disabled Indian. Summary.
VT 004 259 ED 016 849 151
A Study of the Influences of the Father's Job and Social Status on the Occupational and Social Goals of Youth.
VT 004 402 ED 017 686 161
An Exploratory Analysis of the Roles and Role Conflicts of Vocational Teachers in Oklahoma.
VT 004 417 ED 016 858 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume One.
VT 004 418 ED 017 688 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume Two.
VT 004 656 ED 016 144 141
Structuring a Program of Research and Development for Kentucky.
VT 004 932 ED 017 728 28
The Qualifications and Professional Responsibilities of Vocational Directors at the Local District Level in the State of Utah.
VT 004 939 ED 017 730 125
Educational Media in Vocational and Technical Education.
VT 004 940 ED 017 731 142
Procedural Guide for the Writing of Proposals.
VT 005 036 ED 016 871 153
Research Visibility. Vocational Education Is People--High School Age Youth.
VT 005 038 ED 016 873 29
Research Visibility. Vocational Education Is People with Educational Needs Beyond the High School.
VT 005 039 ED 016 874 166
Research Visibility. Vocational Education Is Service--Toward Teaching Excellence.
VT 005 136 173
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.

VOCATIONAL AND SUPPORTING SERVICES INDEX

Page

VT 005 268 ED 017 743 45
Research Visibility. Vocational Education Is Service--Curriculum Development and Instructional Materials.

VT 005 744 ED (See Oct '68 RIE) ·173
Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.

VT 005 745 ED (See Oct '68 RIE) 174
Microfiche Collection of Documents Reported in Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.

SUBJECT INDEX

Page

ACADEMIC ACHIEVEMENT
VT 002 250 92
The Use of the Differential Aptitude Tests in Predicting Achievement in High School and College.

ACCIDENT PREVENTION
VT 001 269 97
Safety in the Drafting Room.

ACCREDITATION (INSTITUTIONS)
VT 004 486 25
Requirements for Approval of Educational Programs for Dental Assistants.

ACHIEVEMENT TESTS
VT 004 295 ED 016 850 93
Development and Utilization of a National Vocational-Technical School Achievement Testing Program Using the Printing Trades as a Pilot Area.

ADMINISTRATIVE POLICY
VT 002 897 ED 017 665 159
Survey of Practices for College Distributive Education and Retailing Occupational Experience Programs.

ADMINISTRATOR ATTITUDES
VT 001 008 ED 017 642 101
The South Dakota Secondary School Dropout Population, 1963-1964.
VT 001 381 ED 016 046 34
The Status of Specialized Courses in Vocational Agriculture.

ADMINISTRATOR GUIDES
VT 000 982 ED 011 091 8
Organization and Operation of Distributive Education Programs for Adults.
VT 001 597 ED 018 597 90
Santa Cruz County Schools Student Follow-Up Survey.
VT 002 646 38
Technical Illustration, Guide for Administrators, Instructors, and Students.
VT 004 940 ED 017 731 142
Procedural Guide for Writing of Proposals.

Page

ADMINISTRATOR RESPONSIBILITY
VT 004 932 ED 017 728 28
The Qualifications and Professional Responsibilities of Vocational Directors at the Local District Level in the State of Utah.

ADOPTION (IDEAS)
VT 000 779 ED 016 770 122
Transparency Masters for Agricultural Education...Interim Report.
VT 001 846 ED 016 056 137
Research Conference in Agricultural Education.

ADULT BASIC EDUCATION
VT 004 314 ED 015 328 119
No Longer Superfluous.

ADULT EDUCATION
VT 001 594 ED (See Sep '68 RIE) 15
A Study of the Educational Needs of Adults in Wyoming.
VT 004 082 ED 015 306 112
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing.
VT 004 083 MP 000 308 113
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing. Summary.

ADULT EDUCATION PROGRAMS
VT 001 261 156
An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents.

ADULT FARMER EDUCATION
VT 002 545 122
1966 Farm Business Management Report and Individual Farm Business Analysis Guide.

ADULT VOCATIONAL EDUCATION
VT 000 982 ED 011 091 8
Organization and Operation of Distributive Education Programs for Adults.
VT 001 313 ED 017 650 168
Liberal Orientations for Vocational Teaching.
VT 002 023 158
Distributive Education for Adults, Selection and Training of Part-Time Instructors.

SUBJECT INDEX

Page

VT 002 163 ED 016 785 18
Vocational Education in Utah.
VT 002 849 62
Job Training for the Mature Woman Entering or Reentering the Labor Force.
VT 003 036 64
Adult Education -- Preparation for Employment.
VT 003 663 MP 000 201 107
Follow-Up Study of MDTA E and D Project at North Carolina A and T State College.
VT 004 089 ED 015 311 114
Secretarial Training with Speech Improvement.

ADIVSORY COMMITTEES
VT 000 043 ED 017 620 2
The Organization and Utilization of Agricultural Advisory Boards in New York State.
VT 004 696 26
Advisory Committees, "Selection and Use".

AEROSPACE INDUSTRY
VT 004 106 ED 016 103 74
A Study of the Re-Employment and Unemployment Experiences of Scientists and Engineers Laid Off from 62 Aero-Space and Electronics Firms in the San Francisco Bay Area During 1963-65.
VT 004 159 ED 015 326 140
Evaluation of Changes in Skill-Profile and Job-Content Due to Technological Change.

AGE
VT 003 848 ED 015 290 68
Labor Force Projections by Color, 1970-80.

AGRICULTURAL EDUCATION
VT 000 022 ED 014 266 48
A Study of the Need for Technician Training in Agriculture and Welding at Yuba College.
VT 000 042 ED 017 619 132
North Atlantic Regional Research Conference in Agricultural Education.
VT 000 177 ED 017 621 48
Determination of Educational Needs of Selected Job Titles in Farm Implement Businesses in Oklahoma.

Page

VT 000 461 ED 018 535 132
Report of Research Coordination Conference on Agricultural Occupations.
VT 000 555 ED 018 539 86
An Instrument for Use in the Self Evaluation of State Staff Supervisory Programs in Agriculture Education.
VT 000 667 ED 018 543 87
An Evaluation of Illinois Post-High School Educational Programs in Agriculture.
VT 000 682 ED 017 632 133
Proceedings of Annual Southern Regional Research Conference, Agricultural Education.
VT 001 120 33
Agricultural Technology, Agricultural Equipment.
VT 001 846 ED 016 056 137
Research Conference in Agricultural Education.
VT 002 881 ED 016 797 63
Manpower Requirements and Demand in Agriculture by Regions and Nationally, with Estimation of Vocational Training and Educational Needs and Productivity.
VT 003 949 ED 015 300 43
Agricultural Education in the Community College.
VT 004 449 ED 015 345 172
Abstracts of Research Studies in Agricultural Education Completed in 1963-64 in the North Atlantic Region.
VT 004 451 ED 015 347 172
Abstracts of Research Studies in Agricultural Education Compiled in 1965-66 in the North Atlantic Region.
VT 004 557 ED 018 654 124
Level of Accounts and Records in Relation to Business and Personal Characteristics of Farmers in Agricultural Education.

AGRICULTURAL ENGINEERING
VT 000 083 ED 018 530 168
Teaching Agricultural Mechanics in High School.

AGRICULTURAL LABORERS
VT 001 264 ED 016 042 89
An Evaluation of the Farm Labor Supervisor Training Program in California.
VT 004 234 ED 016 115 76
Farmers, Workers, and Machines.

SUBJECT INDEX

Page

AGRICULTURAL MACHINERY
VT 001 120 — 33
Agricultural Technology, Agricultural Equipment.
VT 003 621 — 41
How Much Instruction in Farm Machinery.

AGRICULTURAL MACHINERY OCCUPATIONS
VT 000 177 ED 017 621 — 48
Determination of Educational Needs of Selected Job Titles in Farm Implement Businesses in Oklahoma.

AGRICULTURAL OCCUPATIONS
VT 001 414 ED 018 573 — 60
Competencies Needed by Employees in Agricultural-Supply Businesses--Sales and Service.

AGRICULTURAL PRODUCTION
VT 004 234 ED 016 115 — 76
Farmers, Workers, and Machines.

AGRICULTURAL SKILLS
VT 000 219 ED 017 623 — 49
Employment Opportunities and Usable Agricultural Skills in Non-Farm Agricultural Occupations in Appalachia.
VT 000 896 ED 017 636 — 53
Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts.
VT 001 202 ED 017 644 — 57
A Study of Non-Farm Agricultural Occupations in Kansas.
VT 001 414 ED 018 573 — 60
Competencies Needed by Employees in Agricultural-Supply Businesses--Sales and Service.

AGRICULTURAL TECHNICIANS
VT 000 922 ED 014 266 — 48
A Study of the Need for Technician Training in Agriculture and Welding at Yuba College.
VT 000 177 ED 017 621 — 48
Determination of Educational Needs of Selected Job Titles in Farm Implement Businesses in Oklahoma.
VT 003 949 ED 015 300 — 43
Agricultural Education in the Community College.
VT 003 950 ED 015 301 — 44
What Does it Take to Sell Feed.

Page

AGRICULTURAL SUPPLY OCCUPATIONS
VT 003 946 ED 014 616 — 42
Post-High School Curriculum for the Grain, Feed, Seed and Farm Supply Industry.
VT 003 950 ED 015 301 — 44
What Does it Take to Sell Feed.

AGRICULTURE
VT 002 881 ED 016 797 — 63
Manpower Requirements and Demand in Agriculture by Regions and Nationally, with Estimation of Vocational Training and Educational Needs and Productivity.

AMERICAN INDIANS
VT 004 095 ED 012 930 — 115
The Cooperative Program for Rehabilitation of the Disabled Indian.
VT 004 161 MP 000 339 — 118
The Cooperative Program for Rehabilitation of the Disabled Indian. Summary.

ANCILLARY SERVICES
VT 004 060 ED 016 100 — 110
Work and Mental Disorder.

ANNOTATED BIBLIOGRAPHIES
VT 000 681 ED 017 631 — 6
The Employment Aspect of Home Economics Education.
VT 001 484 ED 017 653 — 97
Office Machines Used in Business Today.
VT 004 449 ED 015 345 — 172
Abstracts of Research Studies in Agricultural Education Completed in 1963-64 in the North Atlantic Region.
VT 004 451 ED 015 347 — 172
Abstracts of Research Studies in Agricultural Education Compiled in 1965-66 in the North Atlantic Region.
VT 005 744 ED (See Oct '68 RIE) — 173
Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.

ANNUAL REPORTS
VT 001 372 — 11
Vocational Education in California, 1964-65.

APPRECTICESHIPS
VT 000 873 ED 018 550 — 6
The Training of Skilled Workers.
VT 003 431 ED 014 020 — 66
A Study of the Registered Apprenticeship Program in Wisconsin.

SUBJECT INDEX

Page

VT 004 254 ED 016 126 77
Start Your Career with Apprecticeship in Washington, D.C.
VT 004 310 ED 015 327 78
Negro Participation in Apprecticeship Programs.

APTITUDE TESTS
VT 002 250 92
The Use of the Differential Aptitude Tests in Predicting Achievement in High School and College.
VT 003 680 ED 014 585 92
Validity Extension Data on the General Aptitude Test Battery.

AREA VOCATIONAL SCHOOLS
VT 000 672 ED 017 629 5
The Need for Area Vocational Schools in Michigan.
VT 001 033 55
Pattern for Progress, An Extension of the Blueprint for Action.
VT 001 511 ED 018 584 14
Guidelines for the Development of Merged Area Vocational Schools and Area Community Colleges by the Merged Area Boards.
VT 001 612 ED 018 599 149
Developing a Program of Student Personnel Services for Area Vocational-Technical Schools.
VT 003 702 ED 016 824 93
An Evaluation Plan for the Greene Joint Vocational School.

ASPIRATION
VT 004 259 ED 016 849 151
A Study of the Influences of the Father's Job and Social Status on the Occupational and Social Goals of Youth.

ASSOCIATE DEGREES
VT 000 678 ED 017 630 6
Associate in Applied Science in Nursing.

ATTENDANCE
VT 001 556 ED 018 591 14
Report to the Congress of the United States, Review of Absences of Trainees Enrolled in Institutional Training Programs.

AUTOMATION
VT 000 865 ED 017 634 51
Automation.

Page

BANKING
VT 000 871 ED 018 549 52
Industry Wage Survey--Banking, November-December 1964.
VT 004 159 ED 015 326 140
Evaluation of Changes in Skill-Profile and Job-Content Due to Technological Change.

BEGINNING TEACHERS
VT 001 938 ED 016 781 157
A Role Analysis of the Beginning Teacher of Vocational Agriculture in Ohio.

BEHAVIOR PATTERNS
VT 004 260 ED 016 128 78
The Job Hunt.

BEHAVIOR RATING SCALES
VT 004 483 ED 016 860 162
Evaluation of Student Teaching in Home Economics.

BIBLIOGRAPHIES
VT 000 099 ED 018 531 172
A Bibliography of Published and Unpublished Vocational and Technical Education Literature.
VT 002 910 ED 017 669 63
A Directory of Community Wage Surveys, 1948-June 1965.
VT 004 329 ED 015 333 81
Sociological Studies of Occupations, A Bibliography.
VT 005 036 ED 016 871 153
Research Visibility. Vocational Education Is People--High School Age Youth.
VT 005 038 ED 016 873 29
Research Visibility. Vocational Education Is People with Educational Needs Beyond the High School.
VT 005 039 ED 016 874 166
Research Visibility. Vocational Education Is Service--Toward Teaching Excellence.
VT 005 136 173
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.
VT 005 268 ED 017 743 45
Research Visibility. Vocational Education Is Service--Curriculum Development and Instructional Materials.

BLUE COLLAR OCCUPATIONS
VT 004 260 ED 016 128 78

SUBJECT INDEX

Page

BOARDS OF EDUCATION
VT 001 511 ED 018 584 14
Guidelines for the Development of Merged Area Vocational Schools and Area Community Colleges by the Merged Area Boards.

BOOKKEEPING
VT 003 255 ED 012 389 20
Pilot Programs in High Schools to Prepare Students for a Wide Spectrum of Computing, Recording, and Bookkeeping Occupations.

BUSINESS EDUCATION
VT 001 452 ED 018 577 135
The Proceedings of the DPE (Research Training) Conference.
VT 001 484 ED 017 653 97
Office Machines Used in Business Today.
VT 001 235 ED 017 645 88
Business Education Standards.
VT 001 598 ED 018 598 36
Sample Business Education Training Plans Conducted Under Manpower Development and Training Programs.
VT 003 255 ED 012 389 20
Pilot Programs in High Schools to Prepare Students for a Wide Spectrum of Computing, Recording, and Bookkeeping Occupations.
VT 004 335 ED 016 851 94
An Evaluation Plan for Business Education Programs in High Schools.
VT 004 397 ED 016 856 170
The Effect of Emphasizing Production Typewriting, Contrasted with Speed Typewriting in Developing Production Typewriting Ability.
VT 004 484 ED 018 861 163
A Study of the Effectiveness of Data Processing Summer Institutes for Business Teachers.

BUSINESS SKILLS
VT 001 414 ED 018 573 60
Competencies Needed by Employees in Agricultural-Supply Businesses--Sales and Service.

BUSINESS SUBJECTS
VT 001 235 ED 017 645 88
Business Education Standards.

CAREER CHOICE
Vt 001 541 ED 018 588 148
70,000 High School Seniors, Their Educational and Vocational Plans.

Page

CENSUS FIGURES
VT 004 311 ED 016 133 79
U.S. Census of Population, 1960. Subject Reports, Labor Reserve -- Age, Education, Occupation, and Other Characteristics of Former Members of the Labor Force.

CERTIFICATION
VT 000 868 ED 013 645 51
Practical Nursing in Illinois.

CHANGING ATTITUDES
VT 000 943 ED 017 640 145
Developing Proper Attitudes Toward Eye Protection in the School Shop.

CHILD CARE CENTERS
VT 001 454 ED 018 579 13
Pilot Training Program for Supervised Worker in Child Development Center.
VT 003 662 MP 000 200 21
Child Day Care Service Needs.

CHILD CARE WORKERS
VT 001 454 ED 018 579 13
Pilot Training Program for Supervised Worker in Child Development Center.

CITY GOVERNMENT
VT 003 879 MP 000 288 70
Employment Effect of State and Local Government Spending.

CLERICAL WORKERS
VT 001 331 ED 018 563 58
Selected Entry Office Jobs for the High School Student.

COLLEGE CURRICULUM
VT 002 941 ED 016 802 39
Research to Establish a College-Level Curriculum in Glass.

COLLEGE GRADUATES
VT 004 327 ED 015 332 80
College, Color, and Employment.

COLLEGE PROGRAMS
VT 003 663 MP 000 201 107
Follow-Up Study of MDTA E and D Project at North Carolina A and T State College.

COLLEGE ROLE
VT 004 317 ED 016 136 152
Counselor Development in American Society.

SUBJECT INDEX

Page

COLLEGE SUPERVISORS
VT 004 593 ED 016 865 164
The Special Contribution of the College Home Economics Education Supervisor to the Student Teaching Situation.

COLLEGE TEACHERS
VT 004 312 ED 016 134 160
Placement Services for College Teachers.
VT 004 313 ED 016 135 161
Academic Labor Markets.

COMMUNICATION SKILLS
VT 004 082 ED 015 306 112
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing.
VT 004 083 MP 000 308 113
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing. Summary.

COMMUNITY COLLEGES
VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.
VT 001 511 ED 018 584 14
Guidelines for the Development of Merged Area Vocational Schools and Area Community Colleges by the Merged Area Boards.
VT 003 949 ED 015 300 43
Agricultural Education in the Community College.

COMMUNITY SURVEYS
VT 002 910 ED 017 669 63
A Directory of Community Wage Surveys, 1948-June 1965.

COMPARATIVE ANALYSIS
VT 003 255 ED 012 389 20
Pilot Programs in High Schools to Prepare Students for a Wide Spectrum of Computing, Recording, and Bookkeeping Occupations.
VT 004 557 ED 018 654 124
Level of Accounts and Records in Relation to Business and Personal Characteristics of Farmers in Agricultural Education.

COMPUTER ASSISTED INSTRUCTION
VT 004 482 ED 016 859 123
Summer Institute, 1967.

Page

VT 005 003 ED (See Sep '68 RIE) 126
Programming Exercises for Computer Aided Drafting.

COMPUTER PROGRAMS
VT 004 528 ED 017 710 153
Exploratory Study of Information--Processing Procedures and Computer-Based Technology in Vocational Counseling.

CONFERENCES
VT 000 042 ED 017 619 132
North Atlantic Regional Research Conference in Agricultural Education.
VT 000 461 ED 018 535 132
Report of Research Coordination Conference on Agricultural Occupations.
VT 000 670 ED 018 544 128
A New Look at the Vocational Purposes of Home Economics Education.
VT 001 089 ED 018 556 146
Leadership for Vocational Education in California.
VT 001 332 ED 018 564 34
Office Occupation Programs Under the Vocational Education Act of 1963.
VT 001 364 ED 018 568 11
Leadership for Vocational Education in California (November, 1965).
VT 001 447 ED 018 576 12
Leadership for Vocational Education in California--January-February, 1966.
VT 001 452 ED 018 577 135
The Proceedings of the DPE (Research Training) Conference.
VT 001 486 ED (See Sep '68 RIE) 128
A Report on the Administrator's Conference on Vocational Education.
VT 004 317 ED 016 136 152
Counselor Development in American Society.

CONSUMER ECONOMICS
VT 000 685 ED 017 633 145
Educating the Teen-Ager in Human Relations and Management of Resources.

COOPERATION
VT 001 261 156
An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents.

SUBJECT INDEX

Page

COOPERATIVE EDUCATION
VT 000 557 ED 018 540 4
A Guide for Part-Time Cooperative Education Programs.
VT 000 667 ED 018 543 87
An Evaluation of Illinois Post-High School Educational Programs in Agriculture.
VT 000 669 5
Industrial Cooperative Training Programs.
VT 001 206 ED 018 560 9
Vocational Agriculture in Transition for Occupational Education.
VT 001 714 ED 016 053 16
Handbook for Developing and Operating Agricultural Occupations Programs.
VT 004 855 ED 017 727 28
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education.

COOPERATIVES
VT 000 429 ED 018 534 32
A Study of Education Regarding Cooperative Organizations in Rural Areas in 118 Illinois High Schools.

COUNSELING
VT 001 125 ED 018 558
Counseling Girls and Women.

COUNSELING FUNCTIONS
VT 004 528 ED 017 710 153
Exploratory Study of Information--Processing Procedures and Computer-Based Technology in Vocational Counseling.

COUNSELOR TRAINING
VT 004 317 ED 016 136 152
Counselor Development in American Society.

COUNSELORS
VT 000 178 ED 017 622 144
Report of the Vocational Guidance Seminars, Summer 1965.
VT 004 178 ED 015 042 151
Vocational-Educational Information Workshop for Rural Guidance Workers.
VT 004 317 ED 016 136 152
Counselor Development in American Society.

Page

COURSE CONTENT
VT 003 674 ED 018 638 42
Education Regarding Credit for Agricultural Production. Report no. 2, Survey of Teachers of Agriculture.

COURSE DESCRIPTIONS
VT 001 120 33
Agricultural Technology, Agricultural Equipment.

COURSES
VT 002 908 ED 017 667 18
Industrial Arts Education.

CREDIT
VT 003 674 ED 018 638 42
Education Regarding Credit for Agricultural Production. Report no. 2, Survey of Teachers of Agriculture.

CREW LEADERS
VT 001 264 ED 016 042 89
An Evaluation of the Farm Labor Supervisor Training Program in California.

CRITICAL INCIDENTS METHOD
VT 004 593 ED 016 865 164
The Special Contribution of the College Home Economics Education Supervisor to the Student Teaching Situation.

CULTURALLY DISADVANTAGED
VT 001 399 ED (See Sep '68 RIE) 101
Workshop for Counselors and Educators Concerned with the Education, Training and Employment of Minority Youth.

CURRICULUM
VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.
VT 000 586 ED 017 628 33
The Development of a Modern Curriculum in Vocational Agriculture.
VT 000 678 ED 017 630 6
Associate in Applied Science in Nursing.
VT 001 030 ED 018 555 9
Technical Education.
VT 001 120 33
Agricultural Technology, Agricultural Equipment.

SUBJECT INDEX

Page

T 001 381 ED 016 046 34
The Status of Specialized Courses in Vocational Agriculture.
T 001 598 ED 018 598 36
Sample Business Education Training Plans Conducted Under Manpower Development and Training Programs.
T 002 552 ED (See Sep '68 RIE) 129
Industrial Arts and Technology, Past, Present, and Future.
VT 004 490 ED 017 707 45
Dental Hygiene Manual, Guide for a Two-Year Post High School Curriculum.
VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.

CURRICULUM DEVELOPMENT
VT 000 586 ED 017 628 33
The Development of a Modern Curriculum in Vocational Agriculture.
VT 001 392 35
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. First Quarterly Technical Report.
VT 001 393 36
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. Second Quarterly Technical Report, The Problem of Defining Objectives.
VT 001 573 ED 018 592 136
Report of a National Vocational-Technical Education Seminar on Research and Curriculum Development.
VT 002 442 ED 017 661 37
Mechanical Technology, Design and Production, Suggested Techniques for Detemining Courses of Study in Vocational Education Programs.
VT 002 941 ED 016 802 39
Research to Establish a College-Level Curriculum in Glass.
VT 004 365 ED 016 854 44
Hospitality Education Curriculum Development Project.
VT 005 268 ED 017 743 45
Research Visibility. Vocational Education Is Service--Curriculum Development and Instructional Materials.

Page

CURRICULUM EVALUATION
VT 001 264 ED 016 042 89
An Evaluation of the Farm Labor Supervisor Training Program in California.

CURRICULUM GUIDES
VT 000 083 ED 018 530 168
Teaching Agricultural Mechanics in High School.
VT 000 400 ED 017 625 32
Preparing Students for Employment in Agriculture.
VT 001 598 ED 018 598 36
Sample Business Education Training Plans Conducted Under Manpower Development and Training Programs.

CURRICULUM PLANNING
VT 001 332 ED 018 564 34
Office Occupation Programs Under the Vocational Education Act of 1963.
VT 002 954 ED 016 069 39
Curricular Considerations, Oswego.
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.
VT 003 946 ED 014 616 42
Post-High School Curriculum for the Grain, Feed, Seed and Farm Supply Industry.

CURRICULUM RESEARCH
VT 001 573 ED 018 592 136
Report of a National Vocational-Technical Education Seminar on Research and Curriculum Development.

DATA COLLECTION
VT 003 820 ED 014 594 139
Follow-Up Techniques in a Large-Scale Test Validation Study.

DATA PROCESSING
VT 001 452 ED 018 577 135
The Proceedings of the DPE (Research Training) Conference.
VT 004 484 ED 016 861 163
A Study of the Effectiveness of Data Processing Summer Institutes for Business Teachers.

DATA PROCESSING OCCUPATIONS
VT 001 453 ED 018 578 60
The Need for In-School Business Data Processing Program.

SUBJECT INDEX

Page

T 002 352 ED 016 062 61
Occupations in Electronic Computing Systems.

AY CARE SERVICES
T 003 662 MP 000 200 21
Child Day Care Service Needs.

EAF EDUCATION
T 004 082 ED 015 306 112
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing.
T 004 083 MP 000 308 113
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing. Summary.

DEMONSTRATION PROJECTS
VT 004 112 MP 000 329 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program. Summary.
VT 004 113 ED 016 105 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program.

DENTAL ASSISTANTS
VT 004 265 MP 000 366 23
Summary Report for the Year Ending June, 1967.
VT 004 486 25
Requirements for Approval of Educational Programs for Dental Assistants.

DENTAL HYGIENISTS
VT 004 490 ED 017 707 45
Dental Hygiene Manual, Guide for a Two-Year Post High School Curriculum.

DEVELOPING NATIONS
VT 003 959 ED 017 679 71
Symposium on Forecasting of Manpower Requirements.

DEVELOPMENTAL TASKS
VT 003 057 ED 017 676 40
Toward the Improvement of Family Life Through Education.

Page

DIFFUSION
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

DISADVANTAGED GROUPS
VT 000 959 ED 018 554 8
Report of the Secretary of Labor on Manpower Research and Training.
VT 004 089 ED 015 311 114
Secretarial Training with Speech Improvement.

DISADVANTAGED YOUTH
VT 001 533 MP 000 107 104
Job Corps Enrollee Applicant Medical Record Analysis and Screening.
VT 002 371 ED 016 063 105
Preparacion, Progreso, Porvenir.
VT 002 722 ED 015 256 106
The Remedial Education Program.
VT 003 361 ED 016 076 107
Survey of Terminees from Out-of-School NYC Projects.
VT 003 854 ED 011 984 108
Action for Employment.
VT 003 855 ED 015 293 109
Summer Community Youth Work Program.

DISTRIBUTIVE EDUCATION
VT 000 982 ED 011 091 8
Organization and Operation of Distributive Education Programs for Adults.
VT 002 023 158
Distributive Education for Adults, Selection and Training of Part-Time Instructors.
VT 002 897 ED 017 665 159
Survey of Practices for College Distributive Education and Retailing Occupational Experience Programs.
VT 004 696 26
Advisory Committees, "Selection and Use".

DOCTORAL THESES
VT 004 449 ED 015 345 172
Abstracts of Research Studies in Agricultural Education Completed in 1963-64 in the North Atlantic Region.
VT 004 451 ED 015 347 172
Abstracts of Research Studies in Agricultural Education Compiled in 1965-66 in the North Atlantic Region.

SUBJECT INDEX

Page

DOMESTIC WORKERS
VT 003 822 MP 000 242 68
Research on the Measurement of Job Vacancies for Domestic Workers.

DRAFTING
VT 001 269 97
Safety in the Drafting Room.
VT 004 482 ED 016 859 123
Summer Institute, 1967.
VT 005 003 ED (See Sep '68 RIE) 126
Programming Exercises for Computer Aided Drafting.

DROPOUT CHARACTERISTICS
VT 001 008 ED 017 642 101
The South Dakota Secondary School Dropout Population, 1963-1964.
VT 001 402 ED 018 572 102
A Study of Dropouts in Texas and Minnesota.
VT 001 516 ED 018 586 103
Virginia Secondary School Dropouts, 1962-63.
VT 001 516 ED 018 586 103
Virginia Secondary School Dropouts, 1962-63.

DROPOUT IDENTIFICATION
VT 004 259 ED 016 849 151
A Study of the Influences of the Father's Job and Social Status on the Occupational and Social Goals of Youth.

DROPOUT PREVENTION
VT 004 114 MP 000 331 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone. Abstract.
VT 004 115 ED 016 106 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone.

DROPOUT RATE
VT 001 008 ED 017 642 101
The South Dakota Secondary School Dropout Population, 1963-1964.

DROPOUT RESEARCH
VT 001 516 ED 018 586 103
Virginia Secondary School Dropouts, 1962-63.

Page

DROPOUTS
VT 000 910 ED 018 552 100
Industrial Arts and High School Dropouts.
VT 001 188 ED 018 559 56
Occupations of South Carolina's Vocational Agriculture Students Completing a Prescribed Course, 1959-63.
VT 001 402 ED 018 572 102
A Study of Dropouts in Texas and Minnesota.
VT 001 516 ED 018 586 103
Virginia Secondary School Dropouts, 1962-63.

ECONOMIC DEVELOPMENT
VT 004 384 ED 016 143 83
Manpower and the Growth of Producer Services.

ECONOMIC DISADVANTAGEMENT
VT 000 684 ED 018 546 100
Working with Low-Income Families.

ECONOMIC PROGRESS
VT 001 471 ED 018 581 103
Investment in Poor People.

ECONOMICALLY DISADVANTAGED
VT 001 471 ED 018 581 103
Investment in Poor People.
VT 003 663 MP 000 201 107
Follow-Up Study of MDTA E and D Project at North Carolina A and T State College.

EDUCATIONAL ADMINISTRATION
VT 002 163 ED 016 785 18
Vocational Education in Utah.
VT 003 249 ED 017 677 19
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level.
VT 004 417 ED 016 858 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume One.
VT 004 418 ED 017 688 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume Two.

EDUCATIONAL ATTITUDES
VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decisions to Forego Retraining Under Manpower Development and Training Act of 1962.

SUBJECT INDEX

Page

EDUCATIONAL BACKGROUND
VT 003 300 ED 016 810 66
Education and Vocational Training of TEC Claimants.

EDUCATIONAL EQUIPMENT
VT 000 519 ED 017 627 96
Space and Equipment for Homemaking Education.

EDUCATIONAL EXPERIMENTS
VT 002 889 ED 013 538 169
The Relative Effectiveness of Supplementing Programed Instruction with Blocked Versus Spaced Review.
VT 004 397 ED 016 856 170
The Effect of Emphasizing Production Typewriting, Contrasted with Speed Typewriting in Developing Production Typewriting Ability.

EDUCATIONAL FACILITIES
VT 000 519 ED 017 627 96
Space and Equipment for Homemaking Education.
VT 000 934 ED 017 639 96
Planning Vocational Agricultural Facilities.

EDUCATIONAL IMPROVEMENT
VT 000 910 ED 018 552 100
Industrial Arts and High School Dropouts.

EDUCATIONAL INNOVATION
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

EDUCATIONAL INTERESTS
VT 000 340 ED 018 533 144
A Report of the Student Vocational Interest Surveys in Ohio Schools, July 1964 to June 1965.
VT 001 541 ED 018 588 148
70,000 High School Seniors, Their Educational and Vocational Plans.
VT 001 641 150
High School Vocational Interest Survey in Canyon County.

EDUCATIONAL NEEDS
VT 000 022 ED 014 266 48
A Study of the Need for Technician Training in Agriculture and Welding at Yuba College.

Page

VT 000 177 ED 017 621 48
Determination of Educational Needs of Selected Job Titles in Farm Implement Businesses in Oklahoma.
VT 000 219 ED 017 623 49
Employment Opportunities and Useable Agricultural Skills in Non-Farm Agricultural Occupations in Appalachia.
VT 000 546 ED 018 538 50
Occupational Opportunities and Training Needs for Non-Farm Agricultural Jobs in the Metropolitan Areas of Louisiana.
VT 000 672 ED 017 629 5
The Need for Area Vocational Schools in Michigan.
VT 000 896 ED 017 636 53
Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts.
VT 000 901 ED 017 637 53
Mathematical Expectations of Technicians in Michigan Industries.
VT 001 202 ED 017 644 57
A Study of Non-Farm Agricultural Occupations in Kansas.
VT 001 331 ED 018 563 58
Selected Entry Office Jobs for the High School Student.
VT 001 332 ED 018 564 34
Office Occupation Programs Under the Vocational Education Act of 1963.
VT 001 362 ED 018 567 58
Survey of Information on Vocational and Technical Education in the State of Illinois.
VT 001 381 ED 016 046 34
The Status of Specialized Courses in Vocational Agriculture.
VT 001 414 ED 018 573 60
Competencies Needed by Employees in Agricultural-Supply Businesses--Sales and Service.
VT 001 453 ED 018 578 60
The Need for In-School Business Data Processing Program.
VT 001 594 ED (See Sep '68 RIE) 15
A Study of the Educational Needs of Adults in Wyoming.
VT 001 612 ED 018 599 149
Developing a Program of Student Personnel Services for Area Vocational-Technical Schools.
VT 001 860 17
Real Estate Education and Research Needs in the San Fernando Valley.

SUBJECT INDEX

Page

VT 002 881 ED 016 797 63
Manpower Requirements and Demand in Agriculture by Regions and Nationally, with Estimation of Vocational Training and Educational Needs and Productivity.
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.
VT 003 522 ED 016 818 67
A Technique for Projection of Occupational-Educational Requirements for State Educational Planning Areas.

EDUCATIONAL OBJECTIVES
VT 000 586 ED 017 628 33
The Development of a Modern Curriculum in Vocational Agriculture.
VT 000 670 ED 018 544 128
A New Look at the Vocational Purposes of Home Economics Education.
VT 001 393 36
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. Second Quarterly Technical Report, The Problem of Defining Objectives.
VT 001 486 ED (See Sep '68 RIE) 128
A Report on the Administrator's Conference on Vocational Education.
VT 002 954 ED 016 069 39
Curricular Considerations, Oswego.

EDUCATIONAL PHILOSOPHY
VT 002 552 ED (See Sep '68 RIE) 129
Industrial Arts and Technology, Past, Present, and Future.
VT 002 954 ED 016 069 39
Curricular Considerations, Oswego.
VT 003 593 ED 017 678 129
Developing Human Potential through Industrial Arts.

EDUCATIONAL PLANNING
VT 001 030 ED 018 555 9
Technical Education.
VT 001 033 55
Pattern for Progress, An Extension of the Blueprint for Action.
VT 001 486 ED (See Sep '68 RIE) 128
A Report on the Administrator's Conference on Vocational Education.
VT 003 522 ED 016 818 67
A Technique for Projection of Occupational-Educational Requirements for State Educational Planning Areas.

Page

VT 003 959 ED 017 679 71
Symposium on Forecasting of Manpower Requirements.

EDUCATIONAL POLICY
VT 000 043 ED 017 620 2
The Organization and Utilization of Agricultural Advisory Boards in New York State.

EDUCATIONAL PRACTICE
VT 000 873 ED 018 550 6
The Training of Skilled Workers.

EDUCATIONAL PROBLEMS
VT 000 910 ED 008 552 100
Industrial Arts and High School Dropouts.
VT 001 594 ED (See Sep '68 RIE) 15
A Study of the Educational Needs of Adults in Wyoming.
VT 002 552 ED (See Sep '68 RIE) 129
Industrial Arts and Technology, Past, Present, and Future.

EDUCATIONAL PROGRAMS
VT 000 672 ED 017 629 5
The Need for Area Vocational Schools in Michigan.
VT 001 399 ED (See Sep '68 RIE) 101
Workshop for Counselors and Educators Concerned with the Education, Training and Employment of Minority Youth.
VT 001 556 ED 018 591 14
Report to the Congress of the United States, Review of Absences of Trainees Enrolled in Institutional Training Programs.
VT 004 057 ED 016 835 72
Education for the Allied Health Professions and Services.

EDUCATIONAL RESEARCH
VT 000 042 ED 017 619 132
North Atlantic Regional Research Conference in Agricultural Education.
VT 000 682 ED 017 632 133
Proceedings of Annual Southern Regional Research Conference, Agricultural Education.
VT 001 334 ED 018 565 135
Research Training Institute for Persons in Vocational Education Participating in Research and Development Activities.

SUBJECT INDEX

Page

VT 001 846 ED 016 056 137
Research Conference in Agricultural Education.
VT 002 121 ED 017 658 137
Research in Vocational Education.
VT 002 944 ED 016 803 159
Review of Research in Vocational Technical Teacher Education.
VT 003 823 ED 016 828 139
Continuation of Research Coordinating Unit for Vocational Education in Oklahoma.
VT 004 449 ED 015 345 172
Abstracts of Research Studies in Agricultural Education Completed in 1963-64 in the North Atlantic Region.
VT 004 451 ED 015 347 172
Abstracts of Research Studies in Agricultural Education Compiled in 1965-66 in the North Atlantic Region.
VT 004 940 ED 017 731 142
Procedural Guide for Writing of Proposals.
VT 005 036 ED 016 871 153
Research Visibility. Vocational Education Is People--High School Age Youth.
VT 005 038 ED 016 873 29
Research Visibility. Vocational Education Is People with Educational Needs Beyond the High School.
VT 005 039 ED 016 874 166
Research Visibility. Vocational Education Is Service--Toward Teaching Excellence.
VT 005 136 173
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.
VT 005 268 ED 017 743 45
Research Visibility. Vocational Education Is Service--Curriculum Development and Instructional Materials.
VT 005 744 ED (See Oct '68 RIE) 173
Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.
VT 005 745 ED (See Oct '68 RIE) 174
Microfiche Collection of Documents Reported in Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.

EDUCATIONAL TELEVISION
VT 002 371 ED 016 063 105
Preparacion, Progreso, Porvenir.

Page

EDUCATIONAL TRENDS
VT 001 364 ED 018 568 11
Leadership for Vocational Education in California.

EDUCATIONALLY DISADVANTAGED
VT 004 314 ED 015 328 119
No Longer Superfluous.

ELECTRONIC DATA PROCESSING
VT 001 533 MP 000 107 104
Job Corps Enrollee Applicant Medical Record Analysis and Screening.
VT 002 352 ED 016 062 61
Occupations in Electronic Computing Systems.

ELECTRONIC TECHNICIANS
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.

ELECTRONICS INDUSTRY
VT 004 106 ED 016 103 74
A Study of the Re-Employment and Unemployment Experiences of Scientists and Engineers Laid Off from 62 Aero-Space and Electronics Firms in the San Francisco Bay Area During 1963-65.

EMOTIONALLY DISTURBED
VT 004 060 ED 016 100 110
Work and Mental Disorder.
VT 004 061 111
Work and Mental Disorder. Summary.
VT 004 062 ED 016 101 111
The Remotivation of Chronic Schizophrenic Men Patients.
VT 004 063 112
The Remotivation of Chronic Schizophrenic Men Patients, Abstract.
VT 004 112 MP 000 329 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program. Summary.
VT 004 113 ED 016 105 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program.

EMPLOYER ATTITUDES
VT 000 865 ED 017 634 51
Automation.

SUBJECT INDEX

Page

VT 004 086 ED 015 308 73
The Negro and Equal Employment Opportunities.

EMPLOYMENT
VT 000 865 ED 017 634 51
Automation.
VT 000 868 ED 013 645 51
Practical Nursing in Illinois.
VT 003 879 MP 000 288 70
Employment Effect of State and Local Government Spending.
VT 003 880 MP 000 289 71
New Evidence on Problems of Reemployment.

EMPLOYMENT EXPERIENCE
VT 001 207 ED 018 561 57
The Employment Situation of White and Negro Youth in the City of Baltimore.
VT 004 327 ED 015 332 80
College, Color, and Employment.

EMPLOYMENT OPPORTUNITIES
VT 000 219 ED 017 623 49
Employment Opportunities and Usable Agricultural Skills in Non-Farm Agricultural Occupations in Appalachia.
VT 000 546 ED 018 538 50
Occupational Opportunities and Training Needs for Non-Farm Agricultural Jobs in the Metropolitan Areas of Louisiana.
VT 000 562 ED 018 541 50
A Study of Employment Opportunities in Off-Farm Agricultural Occupations in Alabama.
VT 000 896 ED 017 636 53
Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts.
VT 001 202 ED 017 644 57
A Study of Non-Farm Agricultural Occupations in Kansas.
VT 001 453 ED 018 578 60
The Need for In-School Business Data Processing Program.
VT 003 226 65
Manpower Requirements in Indiana Hospitals.
VT 003 822 MP 000 242 68
Research on the Measurement of Job Vacancies for Domestic Workers.
VT 003 858 MP 000 270 69
Job Vacancy Surveys.

Page

VT 004 310 ED 015 327 78
Negro Participation in Apprenticeship Programs.

EMPLOYMENT PATTERNS
VT 004 313 ED 016 135 161
Academic Labor Markets.

EMPLOYMENT PROBLEMS
VT 004 060 ED 016 100 110
Work and Mental Disorder.
VT 004 332 ED 016 141 83
Impacts of Technological Changes in Warehousing, Phase I.

EMPLOYMENT PROGRAMS
VT 003 854 ED 011 984 108
Action for Employment.

EMPLOYMENT PROJECTIONS
VT 000 973 ED 017 641 133
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.
VT 001 453 ED 018 578 60
The Need for In-School Business Data Processing Program.
VT 002 881 ED 016 797 63
Manpower Requirements and Demand in Agriculture by Regions and Nationally, with Estimation of Vocational Training and Educational Needs and Productivity.
VT 003 522 ED 016 818 67
A Technique for Projection of Occupational-Educational Requirements for State Educational Planning Areas.
VT 003 959 ED 017 679 71
Symposium on Forecasting of Manpower Requirements.
VT 004 309 ED 016 132 141
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.

EMPLOYMENT QUALIFICATIONS
VT 000 896 ED 017 636 53
Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts.
VT 001 202 ED 017 644 57
A Study of Non-Farm Agricultural Occupations in Kansas.
VT 002 352 ED 016 062 61
Occupations in Electronic Computing Systems.

SUBJECT INDEX

Page

VT 004 932 ED 017 728 28
The Qualifications and Professional Responsibilities of Vocational Directors at the Local District Level in the State of Utah.

EMPLOYMENT SERVICES
VT 003 682 ED 014 586 138
A Study of Relationships Between the Employment Service Active File and Unemployment, Greensboro - High Point Area.
VT 004 312 ED 016 134 160
Placement Services for College Teachers.

EMPLOYMENT STATISTICS
VT 004 384 ED 016 143 83
Manpower and the Growth of Producer Services.

EMPLOYMENT TRENDS
VT 001 362 ED 018 567 58
Survey of Information on Vocational and Technical Education in the State of Illinois.
VT 002 385 ED 014 555 61
Technology and Manpower in the Health Service Industry, 1965-75.
VT 003 226 65
Manpower Requirements in Indiana Hospitals.
VT 003 877 MP 000 286 70
Changes in Occupational Employment Over the Past Decade.
VT 004 057 ED 016 835 72
Education for the Allied Health Professions and Services.
VT 004 309 ED 016 132 141
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.
VT 004 326 ED 015 331 80
Unused Manpower, the Nation's Loss.

ENGINEERING DRAWING
VT 004 482 ED 016 859 123
Summer Institute, 1967.
VT 005 003 ED (See Sep '68 RIE) 126
Programming Exercises for Computer Aided Drafting.

ENGINEERING TECHNICIANS
VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.

Page

ENGINEERS
VT 004 106 ED 016 103 74
A Study of the Re-Employment and Unemployment Experiences of Scientists and Engineers Laid Off from 62 Aero-Space and Electronics Firms in the San Francisco Bay Area During 1963-65.
VT 004 111 ED 015 324 75
Obsolescence and Updating of Engineers' and Scientists' Skills.

ENROLLMENT INFLUENCES
VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decisions to Forego Retraining Under Manpower Development and Training Act of 1962.

EQUAL OPPORTUNITIES (JOBS)
VT 004 086 ED 015 308 73
The Negro and Equal Employment Opportunities.

EQUIPMENT
VT 000 934 ED 017 639 96
Planning Vocational Agricultural Facilities.
VT 002 895 ED 017 664 98
A Guide for Equipping Industrial Arts Facilities.

EVALUATION
VT 000 043 ED 017 620 2
The Organization and Utilization of Agricultural Advisory Boards in New York State.

EVALUATION CRITERIA
VT 001 391 ED 018 571 89
Instrument for Evaluating a Department of Vocational Agriculture.
VT 004 335 ED 016 851 94
An Evaluation Plan for Business Education Programs in High Schools.

EVALUATION TECHNIQUES
VT 003 702 ED 016 824 93
An Evaluation Plan for the Greene Joint Vocational School.
VT 004 335 ED 016 851 94
An Evaluation Plan for Business Education Programs in High Schools.

SUBJECT INDEX

Page

EXPENDITURES
VT 003 879 MP 000 288 70
Employment Effect of State and Local Government Spending.

EXPERIMENTAL CURRICULUM
VT 001 393 36
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. Second Quarterly Technical Report, The Problem of Defining Objectives.

EXPERIMENTAL PROGRAMS
VT 001 907 17
Pilot Training Programs in Home Economics.
VT 003 663 MP 000 201 107
Follow-Up Study of MDTA E and D Project at North Carolina A and T State College.
VT 004 089 ED 015 311 114
Secretarial Training with Speech Improvement.
VT 004 092 ED 015 314 114
Vocational Readiness for Young Disabled Students in New York City.
VT 004 528 ED 017 710 153
Exploratory Study of Information--Processing Procedures and Computer-Based Technology in Vocational Counseling.

EXTENSION AGENTS
VT 001 261 156
An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents.
VT 001 840 ED 017 654 169
Programmed Learning in Extension Training.

EXTENSION EDUCATION
VT 001 840 ED 017 654 169
Programmed Learning in Extension Training.

EYES
VT 000 943 ED 017 640 145
Developing Proper Attitudes Toward Eye Protection in the School Shop.
VT 001 236 96
Standards for Eye Protection in Public Schools.

Page

FACULTY RECRUITMENT
VT 004 313 ED 016 135 161
Academic Labor Markets.

FAMILY LIFE EDUCATION
VT 003 057 ED 017 676 40
Toward the Improvement of Family Life Through Education.

FAMILY (SOCIOLOGICAL UNIT)
VT 000 684 ED 018 546 100
Working with Low-Income Families.

FARM ACCOUNTS
VT 002 545 122
1966 Farm Business Management Report and Individual Farm Business Analysis Guide.
VT 004 557 ED 018 654 124
Level of Accounts and Records in Relation to Business and Personal Characteristics of Farmers in Agricultural Education.

FARM MANAGEMENT
VT 002 545 122
1966 Farm Business Management Report and Individual Farm Business Analysis Guide.
VT 003 674 ED 018 638 42
Education Regarding Credit for Agricultural Production. Report no. 2, Survey of Teachers of Agriculture.

FARMERS
VT 002 545 122
1966 Farm Business Management Report and Individual Farm Business Analysis Guide.
VT 004 557 ED 018 654 124
Level of Accounts and Records in Relation to Business and Personal Characteristics of Farmers in Agricultural Education.

FEASIBILITY STUDIES
VT 000 022 ED 014 266 48
A Study of the Need for Technician Training in Agriculture and Welding at Yuba College.
VT 004 332 ED 016 141 83
Impacts of Technological Changes in Warehousing, Phase I.

Page

FEDERAL AID
VT 000 331 ED 017 624 3
Allied Health Professions Educational Improvement Grants.

FEDERAL LAWS
VT 003 612 ED 018 636 138
Federal Aid for Industrial Arts.

FEDERAL LEGISLATION
VT 000 331 ED 017 624 3
Allied Health Professions Educational Improvement Grants.

FEDERAL PROGRAMS
VT 001 556 ED 018 591 14
Report to the Congress of the United States, Review of Absences of Trainees Enrolled in Institutional Training Programs.
VT 003 867 ED 014 614 110
Report on MDTA Institutional Training Program Developments.

FELLOWSHIPS
VT 003 612 ED 018 636 138
Federal Aid for Industrial Arts.

FEMALES
VT 000 670 ED 018 544 128
A New Look at the Vocational Purposes of Home Economics Education.
VT 001 125 ED 018 558 147
Counseling Girls and Women.
VT 002 849 62
Job Training for the Mature Woman Entering or Reentering the Labor Force.

FILM PRODUCTION
VT 003 308 ED 016 074 123
Development of a Film on Homemaker Services.

FLUID POWER EDUCATION
VT 004 262 ED 016 130 22
The Fluid Power Institutes Tested Procedures for Introducing Emerging Technologies, 1966.

FOOD SERVICE OCCUPATIONS
VT 004 638 ED 015 734 25
Guidelines for Hospitality Education in Junior Colleges.

Page

FOOD SERVICE WORKERS
VT 004 365 ED 016 854 44
Hospitality Education Curriculum Development Project.

FRINGE BENEFITS
VT 004 331 ED 016 140 82
Health Insurance Coverage for Workers on Layoff.

GENERAL APTITUDE TEST BATTERY
VT 003 680 ED 014 585 92
Validity Extension Data on the General Aptitude Test Battery.

GENERAL EDUCATION
VT 001 313 ED 017 650 168
Liberal Orientations for Vocational Teaching.

GOVERNMENT ROLE
VT 004 317 ED 016 136 152
Counselor Development in American Society.

GLASS
VT 002 941 ED 016 802 39
Research to Establish a College-Level Curriculum in Glass.

GRADUATE SURVEYS
VT 001 010 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts State-Aided Vocational Schools, Class of 1962.
VT 001 024 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts, State-Aided Vocational Schools, Class of 1964.
VT 001 103 56
Graduate Follow-Up, 1964.
VT 001 597 ED 018 597 90
Santa Cruz County Schools Student Follow-Up Survey.
VT 003 820 ED 014 594 139
Follow-Up Techniques in a Large-Scale Test Validation Study.

GRADUATES
VT 001 010 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts State-Aided Vocational Schools, Class of 1962.

SUBJECT INDEX

Page

GUIDANCE PROGRAMS
VT 001 392 — 35
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. First Quarterly Technical Report.
VT 001 393 — 36
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. Second Quarterly Technical Report, The Problem of Defining Objectives.

GUIDELINES
VT 000 474 ED 018 536 — 86
Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.
VT 000 927 ED 017 638 — 7
Fact-Finding in Vocational Education.
VT 001 511 ED 018 584 — 14
Guidelines for the Development of Merged Area Vocational Schools and Area Community Colleges by the Merged Area Boards.
VT 004 696 — 26
Advisory Committees, "Selection and Use".
VT 004 855 ED 017 727 — 28
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education.

HAND TOOLS
VT 002 895 ED 017 664 — 98
A Guide for Equipping Industrial Arts Facilities.

HANDICAPPED STUDENTS
VT 003 666 ED 014 581 — 108
Handicapped Youth Experimental Training Fund.
VT 004 092 ED 015 314 — 114
Vocational Readiness for Young Disabled Students in New York City.

HARVESTING
VT 004 234 ED 016 115 — 76
Farmers, Workers, and Machines.

HEALTH INSURANCE
VT 004 331 ED 016 140 — 82
Health Insurance Coverage for Workers on Layoff.

Page

HEALTH OCCUPATIONS
VT 001 982 ED 017 656 — 150
Pathways to Health Careers.
VT 002 385 ED 014 555 — 61
Technology and Manpower in the Health Service Industry, 1965-75.
VT 003 226 — 65
Manpower Requirements in Indiana Hospitals.
VT 004 396 ED 011 709 — 119
Occupations in the Care and Rehabilitation of the Mentally Retarded.

HEALTH OCCUPATIONS CENTERS
VT 003 689 ED 016 823 — 22
Health Occupations Education Centers.

HEALTH OCCUPATIONS EDUCATION
VT 003 689 ED 016 823 — 22
Health Occupations Education Centers.
VT 000 331 ED 017 624 — 3
Allied Health Professions Educational Improvement Grants.
VT 000 678 ED 017 630 — 6
Associate in Applied Science in Nursing.
VT 001 428 ED 016 047 — 90
A Study of the Practical Nursing Programs in Vermont.
VT 004 057 ED 016 835 — 72
Education for the Allied Health Professions and Services.
VT 004 265 MP 000 366 — 23
Summary Report for the Year Ending June, 1967.
VT 004 486 — 25
Requirements for Approval of Educational Programs for Dental Assistants.
VT 004 490 ED 017 707 — 45
Dental Hygiene Manual, Guide for a Two-Year Post High School Curriculum.

HEALTH PERSONNEL
VT 004 057 ED 016 835 — 72
Education for the Allied Health Professions and Services.

HEALTH SERVICES
VT 002 385 ED 014 555 — 61
Technology and Manpower in the Health Service Industry, 1965-75.

HIGH SCHOOL GRADUATES
VT 001 188 ED 018 559 — 56
Occupations of South Carolina's Vocational Agriculture Students Completing a Prescribed Course, 1959-63.

SUBJECT INDEX

Page

VT 001 207 ED 018 561 57
The Employment Situation of White and Negro Youth in the City of Baltimore.
VT 003 820 ED 014 594 139
Follow-Up Techniques in a Large-Scale Test Validation Study.

HIGH SCHOOL STUDENTS
VT 000 340 ED 018 533 144
A Report of the Student Vocational Interest Surveys in Ohio Schools, July 1964 to June 1965.
VT 001 008 ED 017 642 101
The South Dakota Secondary School Dropout Population, 1963-1964.
VT 001 541 ED 018 588 148
70,000 High School Seniors, Their Educational and Vocational Plans.
VT 001 641 150
High School Vocational Interest Survey in Canyon County.
VT 002 026 ED 016 784 91
Secondary Students' Mathematics Competencies in Relation to Employment Tests.
VT 002 250 92
The Use of the Differential Aptitude Tests in Predicting Achievement in High School and College.
VT 004 259 ED 016 849 151
A Study of the Influences of the Father's Job and Social Status on the Occupational and Social Goals of Youth.

HIGH SCHOOLS
VT 000 519 ED 017 627 96
Space and Equipment for Homemaking Education.
VT 001 516 ED 018 586 103
Virginia Secondary School Dropouts, 1962-63.
VT 005 036 ED 016 871 153
Research Visibility. Vocational Education Is People--High School Age Youth.

HOME ECONOMICS
VT 000 684 ED 018 546 100
Working with Low-Income Families.

HOME ECONOMICS EDUCATION
VT 000 670 ED 018 544 128
A New Look at the Vocational Purposes of Home Economics Education.
VT 004 483 ED 016 860 162
Evaluation of Student Teaching in Home Economics.

Page

VT 004 593 ED 016 865 164
The Special Contribution of the College Home Economics Education Supervisor to the Student Teaching Situation.

HOME ECONOMICS SKILLS
VT 003 036 64
Adult Education -- Preparation for Employment.

HOME MANAGEMENT
VT 000 685 ED 017 633 145
Educating the Teen-Ager in Human Relations and Management of Resources.

HOMEMAKING EDUCATION
VT 000 519 ED 017 627 96
Space and Equipment for Homemaking Education.
VT 000 685 ED 017 633 145
Educating the Teen-Ager in Human Relations and Management of Resources.
VT 003 057 ED 017 676 40
Toward the Improvement of Family Life Through Education.

HOSPITALS
VT 003 226 65
Manpower Requirements in Indiana Hospitals.

HUMAN RELATIONS
VT 000 685 ED 017 633 145
Educating the Teen-Ager in Human Relations and Management of Resources.

ILLUSTRATORS
VT 002 646 38
Technical Illustration, Guide for Administrators, Instructors, and Students.

IMPROVEMENT
VT 004 111 ED 016 324 75
Obsolescence and Updating of Engineers' and Scientists' Skills.

INCOME
VT 001 207 ED 018 561 57
The Employment Situation of White and Negro Youth in the City of Baltimore.

INDIGENOUS PERSONNEL
VT 003 854 ED 011 984 108
Action for Employment.

SUBJECT INDEX

Page

INDIVIDUAL CHARACTERISTICS
VT 003 880 MP 000 289 71
New Evidence on Problems of Reemployment.
VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.

INDIVIDUALIZED PROGRAMS
VT 003 593 ED 017 678 129
Developing Human Potential through Industrial Arts.

INDUSTRIAL ARTS
VT 000 895 ED 018 551 88
The Status of and Need for Industrial Education in the Public Secondary Schools in Utah.
VT 000 910 ED 018 552 100
Industrial Arts and High School Dropouts.
VT 001 269 97
Safety in the Drafting Room.
VT 002 552 ED (See Sep '68 RIE) 129
Industrial Arts and Technology, Past, Present, and Future.
VT 002 895 ED 017 664 98
A Guide for Equipping Industrial Arts Facilities.
VT 002 908 ED 017 667 18
Industrial Arts Education.
VT 002 954 ED 016 069 39
Curricular Considerations, Oswego.
VT 003 593 ED 017 678 129
Developing Human Potential through Industrial Arts.
VT 004 836 ED 017 723 27
Study of Industrial Arts Education in Public Secondary Schools of the Southern Appalachian Region.

INDUSTRIAL ARTS TEACHERS
VT 002 908 ED 017 667 18
Industrial Arts Education.

INDUSTRIAL EDUCATION
VT 000 895 ED 018 551 88
The Status of and Need for Industrial Education in the Public Secondary Schools in Utah.
VT 005 136 173
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.

Page

INFORMATION DISSEMINATION
VT 001 846 ED 016 056 137
Research Conference in Agricultural Education.
VT 004 178 ED 015 042 151
Vocational-Educational Information Workshop for Rural Guidance Workers.

INFORMATION SYSTEMS
VT 004 528 ED 017 710 153
Exploratory Study of Information--Processing Procedures and Computer-Based Technology in Vocational Counseling.

INSERVICE EDUCATION
VT 000 205 156
The Role of Teacher Education Institutions, In-Service Programs.

INSERVICE TEACHER EDUCATION
VT 000 400 ED 017 625 32
Preparing Students for Employment in Agriculture.
VT 001 365 ED 016 044 157
Trade and Technical Teacher's Opinions on Inservice Education.
VT 004 660 ED 016 867 164
University of Illinois Summer Institute for Teachers of Ornamental Horticulture in Midwestern Section of the United States.

INSTITUTES (TRAINING PROGRAMS)
VT 001 334 ED 018 565 135
Research Training Institute for Persons in Vocational Education Participating in Research and Development Activities.
VT 003 612 ED 018 636 138
Federal Aid for Industrial Arts.
VT 004 660 ED 016 867 164
University of Illinois Summer Institute for Teachers of Ornamental Horticulture in the Midwestern Section of the United States.

INSTRUCTIONAL AIDS
VT 000 429 ED 018 534 32
A Study of Education Regarding Cooperative Organizations in Rural Areas in 118 Illinois High Schools.

SUBJECT INDEX

Page

INSTRUCTIONAL FILMS
VT 003 308 ED 016 074 123
Development of a Film on Homemaker Services.

INSTRUCTIONAL MATERIALS
VT 002 722 ED 015 256 106
The Remedial Education Program.
VT 004 482 ED 016 859 123
Summer Institute, 1967.
VT 004 635 ED 017 714 124
The Vocabulary of Instructional Materials for Typing and Stenographic Training.
VT 004 660 ED 016 867 164
University of Illinois Summer Institute for Teachers of Ornamental Horticulture in the Midwestern Section of the United States.
VT 005 003 ED (See Sep '68 RIE) 126
Programming Exercises for Computer Aided Drafting.

INSTRUCTIONAL MEDIA
VT 004 939 ED 017 730 125
Educational Media in Vocational and Technical Education.

INSTRUCTIONAL PROGRAMS
VT 000 429 ED 018 534 32
A Study of Education Regarding Cooperative Organizations in Rural Areas in 118 Illinois High Schools.
VT 003 621 41
How Much Instruction in Farm Machinery.

INTEGRATION METHODS
VT 004 086 ED 015 308 73
The Negro and Equal Employment Opportunities.

INDERDISCIPLINARY APPROACH
VT 003 689 ED 016 823 22
Health Occupations Education Centers.

INTERPERSONAL RELATIONSHIP
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations

JOB ANALYSIS
VT 001 331 ED 018 563 58
Selected Entry Office Jobs for the High School Student.
35

Page

VT 001 392 35
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. First Quarterly Technical Report.
VT 002 442 ED 017 661 37
Mechanical Technology, Design and Production, Suggested Techniques for Determining Courses of Study in Vocational Education Programs.

JOB APPLICANTS
VT 004 260 ED 016 218 78
The Job Hunt.

JOB APPLICATION
VT 002 026 ED 016 784 91
Secondary Students' Mathematics Competencies in Relation to Employment Tests.
VT 003 682 ED 014 586 138
A Study of Relationships Between the Employment Service Active File and Unemployment, Greensboro - High Point Area.
VT 004 100 ED 015 320 73
The Unemployed and the Underemployed.

JOB CORPS
VT 001 533 MP 000 107 104
Job Corps Enrollee Applicant Medical Record Analysis and Screening.

JOB LAYOFF
VT 004 106 ED 016 103 74
A Study of the Re-Employment and Unemployment Experiences of Scientists and Engineers Laid Off from 62 Aero-Space and Electronics Firms in the San Francisco Bay Area During 1963-65.
VT 004 331 ED 016 140 82
Health Insurance Coverage for Workers on Layoff.

JOB SKILLS
VT 003 950 ED 015 301 44
What Does it Take to Sell Feed.
VT 004 111 ED 015 324 75
Obsolescence and Updating of Engineers' and Scientists' Skills.
VT 004 159 ED 015 326 140
Evaluation of Changes in Skill-Profile and Job-Content Due to Technological Change.

SUBJECT INDEX

Page

JOB TRAINING
VT 003 854 ED 011 984 108
Action for Employment.

JUNIOR COLLEGES
VT 002 646 38
Technical Illustration, Guide for Administrators, Instructors, and Students.

LABOR FORCE
VT 001 362 ED 018 567 58
Survey of Information on Vocational and Technical Education in the State of Illinois.
VT 002 910 ED 017 669 63
A Directory of Community Wage Surveys, 1948-June 1965.
VT 003 260 ED 015 263 65
National Vocational-Technical Education Seminar on Occupational Mobility and Migration.
VT 003 848 ED 015 290 68
Labor Force Projections by Color, 1970-80.
VT 003 858 MP 000 270 69
Job Vacancy Surveys.
VT 003 877 MP 000 286 70
Changes in Occupational Employment Over the Past Decade.
VT 003 880 MP 000 289 71
New Evidence on Problems of Reemployment.

LABOR FORCE NONPARTICIPANTS
VT 004 311 ED 016 133 79
U.S. Census of Population, 1960. Subject Reports, Labor Reserve -- Age, Education, Occupation, and Other Characteristics of Former Members of the Labor Force.
VT 004 326 ED 015 331 80
Unused Manpower, the Nation's Loss.

LABOR MARKET
VT 000 973 ED 017 641 133
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.
VT 001 447 ED 018 576 12
Leadership for Vocational Education in California--January-February, 1966.

LABOR UNIONS
VT 004 310 ED 015 327 78
Negro Participation in Apprenticeship Programs.

Page

LABORERS
VT 004 100 ED 015 320 73
The Unemployed and the Underemployed.

LEADERSHIP
VT 001 364 ED 018 568 11
Leadership for Vocational Education in California.

LEADERSHIP TRAINING
VT 001 334 ED 018 565 135
Research Training Institute for Persons in Vocational Education Participating in Research and Development Activities.

LIBRARY SCIENCE
VT 004 255 ED 016 127 77
Occupations in the Field of Library Science.

LIBRARY SPECIALISTS
VT 004 255 ED 016 127 77
Occupations in the Field of Library Science.

LITERATURE REVIEWS
VT 001 399 ED (See Sep '68 RIE) 101
Workshop for Counselors and Educators Concerned with the Education, Training and Employment of Minority Youth.
VT 004 330 ED 015 334 82
Local Manpower Data Programs.

LOW INCOME GROUPS
VT 000 684 ED 018 546 100
Working with Low-Income Families.

MDTA Programs
VT 000 959 ED 018 554 8
Report of the Secretary of Labor on Manpower Research and Training.
VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decisions to Forego Retraining Under Manpower Development and Training Act of 1962.
VT 001 447 ED 018 576 12
Leadership for Vocational Education in California--January-February, 1966.
VT 003 663 MP 000 201 107
Follow-Up Study of MDTA E and D Project at North Carolina A and T State College.

SUBJECT INDEX

Page

VT 003 867 ED 014 614 110
Report on MDTA Institutional Training Program Developments.
VT 004 326 ED 015 331 80
Unused Manpower, the Nation's Loss.

MACHINE TOOLS
VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.

MANPOWER DEVELOPMENT
VT 001 447 ED 018 576 12
Leadership for Vocational Education in California--January-February, 1966.
VT 001 471 ED 018 581 103
Investment in Poor People
VT 001 556 ED 018 591 14
Report to the Congress of the United States, Review of Absences of Trainees Enrolled in Institutional Training Programs.
VT 003 585 ED 018 635 20
Position Statement on a National Manpower Policy.
VT 003 867 ED 014 614 110
Report on MDTA Institutional Training Program Developments.
VT 003 959 ED 017 679 71
Symposium on Forecasting of Manpower Requirements.
VT 004 330 ED 015 334 82
Local Manpower Data Programs.

MANPOWER DEVELOPMENT AND TRAINING ACT
VT 001 556 ED 018 591 14
Report to the Congress of the United States, Review of Absences of Trainees Enrolled in Institutional Training Programs.
VT 001 598 ED 018 598 36
Sample Business Education Training Plans Conducted Under Manpower Development and Training Programs.

MANPOWER UTILIZATION
VT 001 447 ED 018 576 12
Leadership for Vocational Education in California--January-February, 1966.
VT 004 326 ED 015 331 80
Unused Manpower, the Nation's Loss.

Page

VT 004 330 ED 015 334 82
Local Manpower Data Programs.

MASTERS THESES
VT 004 449 ED 015 345 172
Abstracts of Research Studies in Agricultural Education Completed in 1963-64 in the North Atlantic Region.
VT 004 451 ED 015 347 172
Abstracts of Research Studies in Agricultural Education Compiled in 1965-66 in the North Atlantic Region.

MATERIAL DEVELOPMENT
VT 000 779 ED 016 770 122
Transparency Masters for Agricultural Education...Interim Report.

MATHEMATICS
VT 002 026 ED 016 784 91
Secondary Students' Mathematics Competencies in Relation to Employment Tests.
VT 000 901 ED 017 637 53
Mathematical Expectations of Technicians in Michigan Industries.

MATHEMATICAL MODELS
VT 002 881 ED 016 797 63
Manpower Requirements and Demand in Agriculture by Regions and Nationally, with Estimation of Vocational Training and Educational Needs and Productivity.
VT 004 309 ED 016 132 141
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.

MEASUREMENT TECHNIQUES
VT 003 822 MP 000 242 68
Research on the Measurement of Job Vacancies for Domestic Workers.

MECHANICAL DESIGN TECHNICIANS
VT 002 442 ED 017 661 37
Mechanical Technology, Design and Production, Suggested Techniques for Detemining Courses of Study in Vocational Education Programs.

MEDICAL EVALUATION
VT 001 533 MP 000 107 104
Job Corps Enrollee Applicant Medical Record Analysis and Screening.

SUBJECT INDEX

Page

MENTALLY HANDICAPPED
VT 001 618 ED 018 600 105
A Plan for an Employment Orientation Program for Retarded Pupils in Public Schools in New Jersey.
VT 004 396 ED 011 709 119
Occupations in the Care and Rehabilitation of the Mentally Retarded.

METAL WORKING OCCUPATIONS
VT 000 873 ED 018 550 6
The Training of Skilled Workers.

METHODOLOGY
VT 000 973 ED 017 641 133
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.
VT 004 309 . ED 016 132 .141
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.

METHODS RESEARCH
VT 004 397 ED 016 856 170
The Effect of Emphasizing Production Typewriting, Contrasted with Speed Typewriting in Developing Production Typewriting Ability.

MIGRATION PATTERNS
VT 003 260 ED 015 263 65
National Vocational-Technical Education Seminar on Occupational Mobility and Migration.

MODELS
VT 000 973 ED 017 641 133
Methodology for Projection of Occupational Trends in the Denver Standard Metorpolitan Statistical Area.

MOTHERS
VT 003 662 MP 000 200 21
Child Day Care Service Needs.

MOTIVATION
VT 004 158 ED 016 110 118
Work Values of the Handicapped.

NATIONAL SURVEYS
VT 000 871 ED 018 549 52
Industry Wage Survey--Banking, November-December 1964.
VT 002 908 ED 017 667 18
Industrial Arts Education.

Page

VT 003 249 ED 017 677 19
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level.
VT 004 417 ED 016 858 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume One.
VT 004 418 ED 017 688 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume Two.

NEGRO EMPLOYMENT
VT 004 086 ED 015 308 73
The Negro and Equal Employment Opportunities.
VT 004 310 ED 015 327 78
Negro Participation in Apprenticeship Programs.
VT 004 327 ED 015 332 80
College, Color, and Employment.

NEGROES
VT 001 207 ED 018 561 57
The Employment Situation of White and Negro Youth in the City of Baltimore.
VT 004 100 ED 015 320 73
The Unemployed and the Underemployed.

NEGRO TEACHERS
VT 004 327 ED 015 332 80
College, Color, and Employment.

NEIGHBORHOOD CENTERS
VT 003 854 ED 011 984 108
Action for Employment.

NEIGHBORHOOD IMPROVEMENT
VT 003 855 ED 015 293 109
Summer Community Youth Work Program.

NEIGHBORHOOD YOUTH CORPS
VT 002 722 ED 015 296 106
The Remedial Education Program.
VT 003 361 ED 016 076 107
Survey of Terminees from Out-of-School NYC Projects.

NUMERICAL CONTROL
VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.

SUBJECT INDEX

Page

NURSES
VT 000 678 ED 017 630 6
Associate in Applied Science in Nursing.

NUTRITION INSTRUCTION
VT 002 019 37
Activating a Nutritional Education Program in Pennsylvania Schools.

OCCUPATIONAL CHOICE
VT 001 641 150
High School Vocational Interest Survey in Canyon County.

OCCUPATIONAL CLUSTERS
VT 000 219 ED 017 623 49
Employment Opportunities and Usable Agricultural Skills in Non-Farm Agricultural Occupations in Appalachia.
VT 003 522 ED 016 818 67
A Technique for Projection of Occupational-Educational Requirements for State Educational Planning Areas.

OCCUPATIONAL GUIDANCE
VT 000 178 ED 017 622 144
Report of the Vocational Guidance Seminars, Summer 1965.
VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.
VT 001 089 ED 018 556 146
Leadership for Vocational Education in California.
VT 001 460 ED 018 580 148
What Kinds of Occupational Information Do Students Need.
VT 004 092 ED 015 314 114
Vocational Readiness for Young Disabled Students in New York City.

OCCUPATIONAL HOME ECONOMICS
VT 000 205 156
The Role of Teacher Education Institutions, In-Service Programs.
VT 000 681 ED 017 631 6
The Employment Aspect of Home Economics Education.
VT 001 387 ED 018 570 12
Opinions of City Home Economics Supervisors on the Employment Emphasis in Home Economics Education at the Secondary Level.

Page

VT 001 454 ED 018 579 13
Pilot Training Program for Supervised Worker in Child Development Center.
VT 001 690 16
Essentials and Requirements of a Vocational Home Economics Program.
VT 001 907 17
Pilot Training Programs in Home Economics.
VT 003 036 64
Adult Education -- Preparation for Employment.
VT 004 365 ED 016 854 44
Hospitality Education Curriculum Development Project.
VT 004 638 ED 015 734 25
Guidelines for Hospitality Education in Junior Colleges.

OCCUPATIONAL INFORMATION
VT 001 362 ED 018 567 58
Survey of Information on Vocational and Technical Education in the State of Illinois.
VT 001 460 ED 018 580 148
What Kinds of Occupational Information Do Students Need.
VT 001 892 ED 017 656 150
Pathways to Health Careers.
VT 002 352 ED 015 062 61
Occupations in Electronic Computing Systems.
VT 002 442 ED 017 661 37
Mechnaical Technology, Design and Production, Suggested Techniques for Determining Courses of Study in Vocational Education Programs.
VT 002 849 62
Job Training for the Mature Woman Entering or Reentering the Labor Force.
VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.
VT 004 178 ED 015 042 151
Vocational-Educational Information Workshop for Rural Guidance Workers.
VT 004 254 ED 015 126 77
Start Your Career with Apprecticeship in Washington, D. C.
VT 004 255 ED 016 127 77
Occupations in the Field of Library Science.

SUBJECT INDEX

Page

VT 004 329 ED 015 333 81
Sociological Studies of Occupations, A Bibliography.
VT 004 396 ED 011 709 119
Occupations in the Care and Rehabilitation of the Mentally Retarded.

OCCUPATIONAL MOBILITY
VT 003 260 ED 015 263 65
National Vocational-Technical Education Seminar on Occupational Mobility and Migration.
VT 004 234 ED 016 115 76
Farmers, Workers, and Machines.

OCCUPATIONAL SURVEYS
VT 000 461 ED 018 535 132
Report of Research Coordination Conference on Agricultural Occupations.
VT 000 546 ED 018 538 50
Occupational Opportunities and Training Needs for Non-Farm Agricultural Jobs in the Metropolitan Areas of Louisiana.
VT 000 562 ED 018 541 50
A Study of Employment Opportunities in Off-Farm Agricultural Occupations in Alabama.
VT 000 871 ED 018 549 52
Industry Wage Survey--Banking, November-December 1964.
VT 001 244 ED 017 646 134
Detroit Study of the Effectiveness of High School Education for Entrance into the World of Work.
VT 001 410 ED 017 652 59
Agricultural Occupations Other than Farming in Missouri.
VT 002 910 ED 017 669 63
A Directory of Community Wage Surveys, 1948-June 1965.
VT 003 822 MP 000 242 68
Research on the Measurement of Job Vacancies for Domestic Workers.
VT 003 858 MP 000 270 69
Job Vacancy Surveys.
VT 003 877 MP 000 286 70
Changes in Occupational Employment Over the Past Decade.
VT 004 330 ED 015 334 82
Local Manpower Data Programs.

OCCUPATIONAL TESTS
VT 000 773 ED 018 547 87
Occupational Competency Tests.

Page

OCCUPATIONS
VT 004 311 ED 016 133 79
U.S. Census of Population, 1960, Subject Reports, Labor Reserve -- Age, Education, Occupation, and Other Characteristics of Former Members of the Labor Force.
VT 004 329 ED 015 333 81
Sociological Studies of Occupations, A Bibliography.

OFF FARM AGRICULTURAL OCCUPATIONS
VT 000 042 ED 017 619 132
North Atlantic Regional Research Conference in Agricultural Education.
VT 000 103 ED 018 532 2
Developing Programs in Agricultural Occupations.
VT 000 219 ED 017 623 49
Employment Opportunities and Usable Agricultural Skills in Non-Farm Agricultural Occupations in Appalachia.
VT 000 400 ED 017 625 32
Preparing Students for Employment in Agriculture.
VT 000 461 ED 018 535 132
Report of Research Coordination Conference on Agricultural Occupations.
VT 000 546 ED 018 538 50
Occupational Opportunities and Training Needs for Non-Farm Agricultural Jobs in the Metropolitan Areas of Louisiana.
VT 000 562 ED 018 541 50
A Study of Employment Opportunities in Off-Farm Agricultural Occupations in Alabama.
VT 000 896 ED 017 636 53
Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts.
VT 001 202 ED 017 644 57
A Study of Non-Farm Agricultural Occupations in Kansas.
VT 001 206 ED 018 560 9
Vocational Agriculture in Transition for Occupational Education.
VT 001 410 ED 017 652 59
Agricultural Occupations Other than Farming in Missouri.
VT 001 714 ED 016 053 16
Handbook for Developing and Operating Agricultural Occupations Programs.

SUBJECT INDEX

Page

OFFICE MACHINES
VT 001 484 ED 017 653 97
Office Machines Used in Business Today.

OFFICE OCCUPATIONS
VT 001 598 ED 018 598 36
Sample Business Education Training Plans Conducted Under Manpower Development and Training Programs.

OFFICE OCCUPATIONS EDUCATION
VT 001 332 ED 018 564 34
Office Occupation Programs Under the Vocational Education Act of 1963.

ON THE JOB TRAINING
VT 002 849 62
Job Training for the Mature Woman Entering or Reentering the Labor Force.

ORGANIZATION
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

ORNAMENTAL HORTICULTURE
VT 000 474 ED 018 536 86
Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.
VT 004 660 ED 016 867 164
University of Illinois Summer Institute for Teachers of Ornamental Horticulture in the Midwestern Section of the United States.

OUT OF SCHOOL YOUTH
VT 002 722 ED 015 256 106
The Remedial Education Program.

PARENT INFLUENCE
VT 004 259 ED 016 849 151
A Study of the Influences of the Father's Job and Social Status on the Occupational and Social Goals of Youth.

PART TIME TEACHERS
VT 002 023 158
Distributive Education for Adults, Selection and Training of Part-Time Instructors.

Page

PARTICIPANT CHARACTERISTICS
VT 003 867 ED 014 614 110
Report on MDTA Institutional Training Program Developments.

PERFORMANCE TESTS
VT 004 295 ED 015 850 93
Development and Utilization of a National Vocational-Technical School Achievement Testing Program Using the Printing Trades as a Pilot Area.

PERSONAL VALUES
VT 004 158 ED 016 110 118
Work Values of the Handicapped.

PERSONALITY
VT 001 399 ED (See Sep '68 RIE) 101
Workshop for Counselors and Educators Concerned with the Education, Training and Employment of Minority Youth.

PHYSICAL SCIENCES
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.

PHYSICALLY HANDICAPPED
VT 004 095 ED 012 930 115
The Cooperative Program for Rehabilitation of the Disabled Indian.
VT 004 158 ED 016 110 118
Work Values of the Handicapped.
VT 004 161 MP 000 339 118
The Cooperative Program for Rehabilitation of the Disabled Indian. Summary.

PILOT PROJECTS
VT 001 454 ED 018 579 13
Pilot Training Program for Supervised Worker in Child Development Center.
VT 004 365 ED 016 854 44
Hospitality Education Curriculum Development Project.

PLANNING
VT 000 934 ED 017 639 96
Planning Vocational Agricultural Facilities.

POPULATION TRENDS
VT 003 848 ED 015 290 68
Labor Force Projections by Color, 1970-80.

SUBJECT INDEX

Page

POST SECONDARY EDUCATION
VT 000 667 ED 018 543 87
An Evaluation of Illinois Post-High School Educational Programs in Agriculture.
VT 001 594 ED (See Sep '68 RIE) 15
A Study of the Educational Needs of Adults in Wyoming.
VT 005 038 ED 016 873 29
Research Visibility. Vocational Education Is People with Educational Needs Beyond the High School.

POVERTY PROGRAMS
VT 001 471 ED 018 581 103
Investment in Poor People.

PRACTICAL NURSES
VT 000 868 ED 013 645 51
Practical Nursing in Illinois.
VT 001 428 ED 016 047 90
A Study of the Practical Nursing Programs in Vermont.

PRACTICAL NURSING
VT 000 868 ED 013 645 51
Practical Nursing in Illinois.

PREDICTIVE ABILITY (TESTING)
VT 002 250 92
The Use of the Differential Aptitude Tests in Predicting Achievement in High School and College.

PREDICTIVE VALIDITY
VT 003 680 ED 014 585 92
Validity Extension Data on the General Aptitude Test Battery.

PRETECHNOLOGY PROGRAMS
VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.

PREVOCATIONAL EDUCATION
VT 003 666 ED 014 581 108
Handicapped Youth Experimental Training Fund.
VT 004 114 MP 000 331 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone. Abstract.

Page

VT 004 115 ED 016 106 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone.
VT 004 314 ED 015 328 119
No Longer Superfluous.

PRINTING
VT 004 295 ED 016 850 93
Development and Utilization of a National Vocational-Technical School Achievement Testing Program Using the Printing Trades as a Pilot Area.

PRODUCER SERVICES
VT 004 384 ED 016 143 83
Manpower and the Growth of Producer Services.

PRODUCTION TECHNICIANS
VT 002 442 ED 017 661 37
Mechanical Technology, Design and Production, Suggested Techniques for Determining Courses of Study in Vocational Education Programs.

PROFESSIONAL EDUCATION
VT 001 365 ED 016 044 157
Trade and Technical Teacher's Opinions on Inservice Education.

PROGRAM ADMINISTRATION
VT 003 585 ED 018 635 20
Position Statement on a National Manpower Policy.
VT 004 262 ED 016 130 22
The Fluid Power Institues Tested Procedures for Introducing Emerging Technologies, 1966.

PROGRAM ATTITUDES
VT 000 895 ED 018 551 88
The Status of and Need for Industrial Education in the Public Secondary Schools in Utah.
VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decisions to Forego Retraining Under Manpower Development and Training Act of 1962.
VT 001 274 ED 017 648 10
A Look at Education for Work in the Omaha Public Schools.

SUBJECT INDEX

Page

VT 001 612 ED 018 599 149
Developing a Program of Student Personnel Services for Area Vocational-Technical Schools.

PROGRAM DESCRIPTIONS
VT 001 372 11
Vocational Education in California, 1964-65.
VT 001 907 17
Pilot Training Programs in Home Economics.
VT 002 552 ED (See Sep '68 RIE) 129
Industrial Arts and Technology, Past, Present, and Future.
VT 003 593 ED 017 678 129
Developing Human Potential through Industrial Arts.
VT 003 823 ED 016 828 139
Continuation of Research Coordinating Unit for Vocational Education in Oklahoma.
VT 003 867 ED 014 614 110
Report on MDTA Institutional Training Program Developments.
VT 004 656 ED 016 144 141
Structuring a Program of Research and Development for Kentucky.

PROGRAM DESIGN
VT 000 873 ED 018 550 6
The Training of Skilled Workers.

PROGRAM DEVELOPMENT
VT 000 103 ED 018 532 2
Developing Programs in Agricultural Occupations.
VT 000 205 156
The Role of Teacher Education Institutions, In-Service Programs.
VT 000 681 ED 017 631 6
The Employment Aspect of Home Economics Education.
VT 000 982 ED 011 091 8
Organization and Operation of Distributive Education Programs for Adults.
VT 001 690 16
Essentials and Requirements of a Vocational Home Economics Program.
VT 001 907 17
Pilot Training Programs in Home Economics.
VT 002 019 37
Activating a Nutritional Education Program in Pennsylvania Schools.

Page

PROGRAM EFFECTIVENESS
VT 004 484 ED ED 016 861 163
A Study of the Effectiveness of Data Processing Summer Institutes for Business Teachers.

PROGRAM EVALUATION
VT 000 178 ED 017 622 144
Report of the Vocational Guidance Seminars, Summer 1965.
VT 000 474 ED 018 536 86
Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.
VT 000 555 ED 018 539 86
An Instrument for Use in the Self Evaluation of State Staff Supervisory Programs in Agriculture Education.
VT 000 667 ED 018 543 87
An Evaluation of Illinois Post-High School Educational Programs in Agriculture.
VT 000 959 ED 018 554 8
Report of the Secretary of Labor on Manpower Research and Training.
VT 001 264 ED 016 042 89
An Evaluation of the Farm Labor Supervisor Training Program in California.
VT 001 391 ED 018 571 89
Instrument for Evaluating a Department of Vocational Agriculture.
VT 001 428 ED 016 047 90
A Study of the Practical Nursing Programs in Vermont.
VT 002 163 ED 016 785 18
Vocational Education in Utah.
VT 003 255 ED 012 389 20
Pilot Programs in High Schools to Prepare Students for a Wide Spectrum of Computing, Recording, and Bookkeeping Occupations.
VT 003 663 MP 000 201 107
Follow-Up Study of MDTA E and D Project at North Carolina A and T State College.
VT 003 702 ED 016 824 93
An Evaluation Plan for the Greene Joint Vocational School.
VT 003 855 ED 015 293 109
Summer Community Youth Work Program.
VT 004 095 ED 012 930 115
The Cooperative Program for Rehabilitation of the Disabled Indian.

SUBJECT INDEX

Page

VT 004 335 ED 016 851 94
An Evaluation Plan for Business Education Programs in High Schools.
VT 004 417 ED 016 858 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume One.
VT 004 418 ED 017 688 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume Two.
VT 004 855 ED 017 727 28
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education.

PROGRAM GUIDES
VT 000 103 ED 018 532 2
Developing Programs in Agricultural Occupations.
VT 000 557 ED 018 540 4
A Guide for Part-Time Cooperative Education Programs.
VT 000 669 5
Industrial Cooperative Training Programs.
VT 000 678 ED 017 630 6
Associate in Applied Science in Nursing.
VT 001 618 ED 018 600 105
A Plan for an Employment Orientation Program for Retarded Pupils in Public Schools in New Jersey.
VT 001 714 ED 016 053 16
Handbook for Developing and Operating Agricultural Occupations Programs.
VT 004 490 ED 017 707 45
Dental Hygiene Manual, Guide for a Two-Year Post High School Curriculum.
VT 004 638 ED 015 734 25
Guidelines for Hospitality Education in Junior Colleges.

PROGRAM IMPROVEMENT
VT 000 331 ED 017 624 3
Allied Health Professions Educational Improvement Grants.

PROGRAM PLANNING
VT 000 474 ED 018 536 86
Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.
VT 000 519 ED 017 627 96
Space and Equipment for Homemaking Education.

Page

VT 001 206 ED 018 560 9
Vocational Agriculture in Transition for Occupational Education.
VT 001 428 ED 016 047 90
A Study of the Practical Nursing Programs in Vermont.
VT 002 646 38
Technical Illustration, Guide for Administrators, Instructors, and Students.
VT 004 262 ED 016 130 22
The Fluid Power Institutes Tested Procedures for Introducing Emerging Technologies, 1966.

PROGRAMED INSTRUCTION
VT 001 840 ED 017 654 169
Programmed Learning in Extension Training.
VT 002 889 ED 013 538 169
The Relative Effectiveness of Supplementing Programed Instruction with Blocked Versus Spaced Review.

PSYCHIATRIC HOSPITALS
VT 004 062 ED 016 101 111
The Remotivation of Chronic Schizophrenic Men Patients.
VT 004 063 112
The Remotivation of Chronic Schizophrenic Men Patients, Abstract.

PSYCHOLOGICAL EVALUATION
VT 001 399 ED (See Sep '68 RIE) 101
Workshop for Counselors and Educators Concerned with the Education, Training and Employment of Minority Youth.

PUBLIC OPINION
VT 001 364 ED 018 568 11
Leadership for Vocational Education in California.

PUBLIC POLICY
VT 003 585 ED 018 635 20
Position Statement on a National Manpower Policy.

PUBLIC SCHOOLS
VT 003 585 ED 018 635 20
Position Statement on a National Manpower Policy.

Q SORT
VT 004 157 ED 016 840 75
Characteristics of Outstanding Engineering Technicians in Arizona.

Page

QUESTIONNAIRES
VT 001 597 ED 018 597 90
Santa Cruz County Schools Student Follow-Up Survey.

RACIAL ATTITUDES
VT 004 086 ED 015 308 73
The Negro and Equal Employment Opportunities.

RACIAL CHARACTERISTICS
VT 003 848 ED 015 290 68
Labor Force Projections by Color, 1970-80.

RACIAL DIFFERENCES
VT 004 327 ED 015 332 80
College, Color, and Employment.

RADIO
VT 001 840 ED 017 654 169
Programmed Learning in Extension Training.

REAL ESTATE OCCUPATIONS 17
VT 001 860
Real Estate Education and Research Needs in the San Fernando Valley.

RECORDKEEPING
VT 003 255 ED 012 389 20
Pilot Programs in High Schools to Prepare Students for a Wide Spectrum of Computing, Recording, and Bookkeeping Occupations.
VT 004 557 ED 018 654 124
Level of Accounts and Records in Relation to Business and Personal Characteristics of Farmers in Agricultural Education.

REFERENCE MATERIALS
VT 000 681 ED 017 631 6
The Employment Aspect of Home Economics Education.

REMEDIAL INSTRUCTION
VT 002 722 ED 015 256 106
The Remedial Education Program.
VT 004 314 ED 015 328 119
No Longer Superfluous.

RESEARCH
VT 000 959 ED 018 553 8
Report of the Secretary of Labor on Manpower Research and Training.

Page

RESEARCH COORDINATING UNITS
VT 003 823 ED 016 828 139
Continuation of Research Coordinating Unit for Vocational Education in Oklahoma.
VT 004 656 ED 016 144 141
Structuring a Program of Research and Development for Kentucky.
VT 004 940 ED 017 731 142
Procedural Guide for Writing of Proposals.

RESEARCH METHODOLOGY
VT 000 042 ED 017 619 132
North Atlantic Regional Research Conference in Agricultural Education.
VT 000 461 ED 018 535 132
Report of Research Coordination Conference on Agricultural Occupations.
VT 001 244 ED 017 646 134
Detroit Study of the Effectiveness of High School Education for Entrance into the World of Work.
VT 001 452 ED 018 577 135
The Proceedings of the DPE (Research Training) Conference.
VT 001 573 ED 018 592 136
Report of a National Vocational-Technical Education Seminar on Research and Curriculum Development.
VT 001 846 ED 016 056 137
Research Conference in Agricultural Education.
VT 002 121 ED 017 658 137
Research in Vocational Education.
VT 005 159 ED 017 740 30
Needed Research on Diffusion within Educational Organizations.

RESEARCH NEEDS
VT 000 682 ED 017 632 133
Proceedings of Annual Southern Regional Research Conference, Agricultural Education.
VT 001 860 17
Real Estate Education and Research Needs in the San Fernando Valley.
VT 002 944 ED 016 803 159
Review of Research in Vocational Technical Teacher Education.

RESEARCH OPPORTUNITIES
VT 002 121 ED 017 658 137
Research in Vocational Education

SUBJECT INDEX

Page

RESEARCH PROBLEMS
VT 002 121 ED 017 658 137
Research in Vocational Education.

RESEARCH PROJECTS
VT 000 099 ED 018 531 172
A Bibliography of Published and Unpublished Vocational And Technical Education Literature.

RESEARCH PROPOSALS
VT 003 612 ED 018 636 138
Federal Aid for Industrial Arts.
VT 004 940 ED 017 731 142
Procedural Guide for Writing of Proposals.

RESEARCH REVIEWS (PUBLICATIONS)
VT 002 944 ED 016 803 159
Review of Research in Vocational Technical Teacher Education.

RESEARCH SKILLS
VT 001 334 ED 018 565 135
Research Training Institute for Persons in Vocational Education Participating in Research and Development Activities.

RESOURCES
VT 002 019 37
Activating a Nutritional Education Program in Pennsylvania Schools.

RETENTION
VT 002 889 ED 013 538 169
The Relative Effectiveness of Supplementing Programed Instruction with Block Versus Spaced Review.

RETRAINING
VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decisions to Forego Retraining Under Manpower Development and Training Act of 1962.

REVIEW (REEXAMINATION)
VT 002 889 ED 013 538 169
The Relative Effectiveness of Supplementing Programed Instruction with Blocked Versus Spaced Review.

ROLE CONFLICT
VT 004 402 ED 017 686 161
An Exploratory Analysis of the Roles and Role Conflicts of Vocational Teachers in Oklahoma.

Page

ROLE PERCEPTION
VT 001 938 ED 016 781 157
A Role Analysis of the Beginning Teacher of Vocational Agriculture in Ohio.

ROLE THEORY
VT 004 402 ED 017 686 161
An Exploratory Analysis of the Roles and Role Conflicts of Vocational Teachers in Oklahoma.

RURAL YOUTH
004 178 ED 015 042 151
Vocational-Educational Information Workshop for Rural Guidance Workers.

SAFETY EQUIPMENT
VT 000 943 ED 017 640 145
Developing Proper Attitudes Toward Eye Protection in the School Shop.

SCHOOL DISTRICTS
VT 004 932 ED 017 728 28
The Qualifications and Professional Responsibilities of Vocational Directors at the Local District Level in the State of Utah.

SCHOOL SAFETY
VT 000 943 ED 017 640 145
Developing Proper Attitudes Toward Eye Protection in the School Shop.
VT 001 236 96
Standards for Eye Protection in Public Schools.
VT 001 269 97
Safety in the Drafting Room.

SCHOOL SHOPS
VT 001 269 97
Safety in the Drafting Room.

SCHOOL SURVEYS
VT 000 895 ED 018 551 88
The Status of and Need for Industrial Education in the Public Secondary Schools in Utah.
VT 002 163 ED 016 785 18
Vocational Education in Utah.
VT 004 836 ED 017 723 27
Study of Industrial Arts Education in Public Secondary Schools of the Southern Appalachian Region.

SUBJECT INDEX

Page

SCIENTIFIC PRINCIPLES
VT 003 395 ED 016 813 40
The Role of the Physical Sciences in Electrical-Electronic Technology.

SCIENTISTS
VT 004 106 ED 016 103 74
A Study of the Re-Employment and Unemployment Experiences of Scientists and Engineers Laid Off from 62 Aero-Space and Electronics Firms in the San Francisco Bay Area During 1963-65.
VT 004 111 ED 015 324 75
Obsolescence and Updating of Engineers' and Scientists' Skills.

SCREENING TESTS
VT 002 026 ED 016 784 91
Secondary Students' Mathematics Competencies in Relation to Employment Tests.

SECONDARY SCHOOLS
VT 004 836 ED 017 723 27
Study of Industrial Arts Education in Public Secondary Schools of the Southern Appalachian Region.

SECRETARIES
VT 001 452 ED 018 577 135
The Proceedings of the DPE (Research Training) Conference.
VT 004 089 ED 015 311 114
Secretarial Training with Speech Improvement.

SELF EVALUATION
VT 000 555 ED 018 539 86
An Instrument for Use in the Self Evaluation of State Staff Supervisory Programs in Agriculture Education.

SEMINARS
VT 000 178 ED 017 622 144
Report of the Vocational Guidance Seminars, Summer 1965.
VT 001 573 ED 018 592 136
Report of a National Vocational-Technical Education Seminar on Research and Curriculum Development.
VT 004 939 ED 017 730 125
Educational Media in Vocational and Technical Education.

Page

SERVICE OCCUPATIONS
VT 004 384 ED 016 143 83
Manpower and the Growth of Producer Services.

SEX (CHARACTERISTICS)
VT 003 848 ED 015 290 68
Labor Force Projections by Color, 1970-80.

SKILLED LABOR
VT 001 471 ED 018 581 .103
Investment in Poor People.

SKILLED OCCUPATIONS
VT 003 431 ED 014 020 66
A Study of the Registered Apprenticeship Program in Wisconsin.
VT 004 254 ED 016 126 77
Start Your Career with Apprenticeship in Washington, D.C.

SLOW LEARNERS
VT 004 114 MP 000 331 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone. Abstract.
VT 004 115 ED 016 106 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone.

SOCIAL INFLUENCES
VT 004 259 ED 016 849 151
A Study of the Influences of the Father's Job and Social Status on the Occupational and Social Goals of Youth.

SOCIAL MOBILITY
VT 003 260 ED 015 263 65
National Vocational-Technical Education Seminar on Occupational Mobility and Migration.

SOCIALLY MALADJUSTED
VT 004 115 ED 016 106 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone.

SUBJECT INDEX

Page

SOCIOLOGY
VT 004 329 ED 015 333 81
Sociological Studies of Occupations, A Bibliography.

SOUTHERN STATES
VT 004 836 ED 017 723 27
Study of Industrial Arts Education in Public Secondary Schools of the Southern Appalachian Region.

SPANISH SPEAKING
VT 002 371 ED 016 063 105
Preparacion, Progreso, Porvenir.

SPECIAL EDUCATION
VT 001 618 ED 018 600 105
A Plan for an Employment Orientation Program for Retarded Pupils in Public Schools in New Jersey.

SPEECH IMPROVEMENT
VT 004 089 ED 015 311 114
Secretarial Training with Speech Improvement.

STANDARDS
VT 001 235 ED 017 645 88
Business Education Standards.
VT 001 236 96
Standards for Eye Protection in Public Schools.
VT 004 486 25
Requirements for Approval of Educational Programs for Dental Assistants.

STATE DEPARTMENTS OF EDUCATION
VT 003 249 ED 017 677 19
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level.
VT 004 417 ED 016 858 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume One.
VT 004 418 ED 017 688 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume Two.

STATE GOVERNMENT
VT 003 879 MP 000 288 70
Employment Effect of State and Local Government Spending.

Page

STATE PROGRAMS
VT 003 823 ED 016 828 139
Continuation of Research Coordinating Unit for Vocational Education in Oklahoma.
VT 004 656 ED 016 144 141
Structuring a Program of Research and Development for Kentucky.

STATE SUPERVISORS
VT 000 555 ED 018 539 86
An Instrument for Use in the Self Evaluation of State Staff Supervisory Programs in Agriculture Education.

STATISTICAL ANALYSIS
VT 004 309 ED 016 132 14
Methodology for Projection of Occupational Trends in the Denver Standard Metropolitan Statistical Area.

STATISTICAL DATA
VT 001 516 ED 018 586 103
Virginia Secondary School Dropouts, 1962-63.

STEEL INDUSTRY
VT 004 159 ED 015 326 140
Evaluation of Changes in Skill-Profile and Job-Content Due to Technological Change.

STENOGRAPHERS
VT 001 331 ED 018 563 58
Selected Entry Office Jobs for the High School Student.

STENOGRAPHY
VT 004 635 ED 017 714 124
The Vocabulary of Instructional Materials for Typing and Stenographic Training.

STRUCTURAL ANALYSIS
VT 004 635 ED 017 714 124
The Vocabulary of Instructional Materials for Typing and Stenographic Training.

STUDENT ATTITUDES
VT 000 943 ED 017 640 145
Developing Proper Attitudes Toward Eye Protection in the School Shop.
VT 001 008 ED 017 642 101
The South Dakota Secondary School Dropout Population, 1963-1964.

Page

VT 001 274 ED 017 648 10
A Look at Education for Work in the Omaha Public Schools.
VT 001 612 ED 018 599 149
Developing a Program of Student Personnel Services for Area Vocational-Technical Schools.

STUDENT ENROLLMENT
VT 002 908 ED 017 667 18
Industrial Arts Education.

STUDENT EVALUATION
VT 001 235 ED 017 645 88
Business Education Standards.
VT 004 295 ED 016 850 93
Development and Utilization of a National Vocational-Technical School Achievement Testing Program Using the Printing Trades as a Pilot Area.

STUDENT NEEDS
VT 001 460 ED 018 580 148
What Kinds of Occupational Information Do Students Need.

STUDENT PERSONNEL SERVICES
VT 001 612 ED 018 599 149
Developing a Program of Student Personnel Services for Area Vocational-Technical Schools.

STUDENT REHABILITATION
VT 004 114 MP 000 331 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone. Abstract.
VT 004 115 ED 016 106 117
The Efficacy of a Prevocational Curriculum and Services Designed to Rehabilitate Slow Learners Who are School Dropout, Delinquency, and Unemployment Prone.

STUDENT TEACHING
VT 004 483 ED 016 860 162
Evaluation of Student Teaching in Home Economics.
VT 004 593 ED 016 865 164
The Special Contribution of the College Home Economics Education Supervisor to the Student Teaching Situation.

Page

SUBPROFESSIONALS
VT 000 901 ED 017 637 53
Mathematical Expectations of Technicians in Michigan Industries.
VT 001 030 ED 018 555 9
Technical Education.

SUMMER INSTITUTES
VT 004 262 ED 016 130 22
The Fluid Power Institutes Tested Procedures for Introducing Emerging Technologies, 1966.
VT 004 482 ED 016 859 123
Summer Institute, 1967.
VT 004 484 ED 016 861 163
A Study of the Effectiveness of Data Processing Summer Institutes for Business Teachers.
VT 005 003 ED (See Sep '68 RIE) 126
Programming Exercises for Computer Aided Drafting.

SUMMER PROGRAMS
VT 003 666 ED 014 581 108
Handicapped Youth Experimental Training Fund.

SUPERVISOR QUALIFICATIONS
VT 004 932 ED 017 728 28
The Qualifications and Professional Responsibilities of Vocational Directors at the Local District Level in the State of Utah.

SUPERVISORS
VT 001 387 ED 018 570 12
Opinions of City Home Economics Supervisors on the Employment Emphasis in Home Economics Education at the Secondary Level.

SUPERVISORY METHODS
VT 000 555 ED 018 539 86
An Instrument for Use in the Self Evaluation of State Staff Supervisory Programs in Agriculture Education.
VT 001 264 ED 016 042 89
An Evaluation of the Farm Labor Supervisor Training Program in California.

SURVEYS
VT 000 927 ED 017 638 7
Fact-Finding in Vocational Education.
VT 001 033 55
Pattern for Progress, An Extension of the Blueprint for Action.

SUBJECT INDEX

Page

T 001 244 ED 017 646 134
Detroit Study of the Effectiveness of High School Education for Entrance into the World of Work.
VT 001 274 ED 017 648 10
A Look at Education for Work in the Omaha Public Schools.

TABLES (DATA)
VT 004 311 ED 016 133 79
U.S. Census of Population, 1960. Subject Reports, Labor Reserve -- Age, Education, Occupation, and Other Characteristics of Former Members of the Labor Force.

TASK PERFORMANCE
VT 001 938 ED 016 781 157
A Role Analysis of the Beginning Teacher of Vocational Agriculture in Ohio.

TEACHER ATTITUDES
VT 001 313 ED 017 650 168
Liberal Orientations for Vocational Teaching.
VT 001 381 ED 016 046 34
The Status of Specialized Courses in Vocational Agriculture.
VT 004 402 ED 017 686 161
An Exploratory Analysis of the Roles and Role Conflicts of Vocational Teachers in Oklahoma.

TEACHER BEHAVIOR
VT 004 483 ED 016 860 162
Evaluation of Student Teaching in Home Economics.

TEACHER CHARACTERISTICS
VT 001 365 ED 016 044 157
Trade and Technical Teacher's Opinions on Inservice Education.
VT 004 836 ED 017 723 27
Study of Industrial Arts Education in Public Secondary Schools of the Southern Appalachian Region.

TEACHER EDUCATION
VT 000 205 156
The Role of Teacher Education Institutions, In-Service Programs.
VT 002 023 158
Distributive Education for Adults, Selection and Training of Part-Time Instructors.

Page

VT 002 897 ED 017 665 159
Survey of Practices for College Distributive Education and Retailing Occupational Experience Programs.
VT 002 944 ED 016 803 159
Review of Research in Vocational Technical Teacher Education.
VT 003 593 ED 017 678 129
Developing Human Potential through Industrial Arts.
VT 004 262 ED 016 130 22
The Fluid Power Institutes Tested Procedures for Introducing Emerging Technologies, 1966.
VT 004 484 ED 016 861 163
A Study of the Effectiveness of Data Processing Summer Institues for Business Teachers.
VT 004 593 ED 016 865 164
The Special Contribution of the College Home Economics Education Supervisor to the Student Teaching Situation.
VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.
VT 005 039 ED 016 874 166
Research Visibility. Vocational Education Is Service--Toward Teaching Excellence.

TEACHER EVALUATION
VT 004 483 ED 016 860 162
Evaluation of Student Teaching in Home Economics.

TEACHER PARTICIPATION
VT 000 779 ED 016 770 122
Transparency Masters for Agricultural Education...Interim Report.

TEACHER PLACEMENT
VT 004 312 ED 016 134 160
Placement Services for College Teachers.

TEACHER RECRUITMENT
VT 005 039 ED 016 874 166
Research Visibility. Vocational Education Is Service--Toward Teaching Excellence.

SUBJECT INDEX

Page

TEACHER ROLE
VT 001 938 ED 016 781 157
A Role Analysis of the Beginning Teacher of Vocational Agriculture in Ohio.
VT 004 402 ED 017 686 161
An Exploratory Analysis of the Roles and Role Conflicts of Vocational Teachers in Oklahoma.

TEACHER SELECTION
VT 002 023 158
Distributive Education for Adults, Selection and Training of Part-Time Instructors.

TEACHER SEMINARS
VT 004 854 ED 017 726 165
An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.

TEACHER SUPPLY AND DEMAND
VT 004 313 ED 016 135 161
Academic Labor Markets.

TEACHING METHODS
VT 000 083 ED 018 530 168
Teaching Agricultural Mechanics in High School.
VT 003 621 41
How Much Instruction in Farm Machinery.
VT 004 397 ED 016 856 170
The Effect of Emphasizing Production Typewriting, Contrasted with Speed Typewriting in Developing Production Typewriting Ability.

TECHNICAL EDUCATION
VT 000 022 ED 014 266 48
A Study of the Need for Technician Training in Agriculture and Welding at Yuba College.
VT 000 532 ED 012 582 3
Technical Education in Michigan Community Colleges.
VT 001 030 ED 018 555 9
Technical Education.
VT 001 120 33
Agricultural Technology, Agricultural Equipment.
VT 003 689 ED 016 823 22
Health Occupations Education Centers.

Page

VT 005 136 173
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.
VT 005 268 ED 017 743 45
Research Visbility. Vocational Education Is Service--Curriculum Development and Instructional Materials.
VT 005 744 ED (See Oct '68 RIE) 173
Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.
VT 005 745 ED (See Oct '68 RIE) 174
Microfiche Collection of Documents Reported in Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.

TECHNOLOGICAL ADVANCEMENT
VT 002 385 ED 014 555 61
Technology and Manpower in the Health Service Industry, 1965-75.
VT 004 111 ED 015 324 75
Obsolescence and Updating of Engineers' and Scientists' Skills.
VT 004 159 ED 015 326 140
Evaluation of Changes in Skill-Profile and Job-Content Due to Technological Change.
VT 004 234 ED 016 115 76
Farmers, Workers, and Machines.
VT 004 332 ED 016 141 83
Impacts of Technological Changes in Warehousing, Phase I.

TECHNOLOGY
VT 002 954 ED 016 069 39
Curricular Considerations, Oswego.

TEENAGERS
VT 000 685 ED 017 633 145
Educating the Teen-Ager in Human Relations and Management of Resources.

TEST CONSTRUCTION
VT 000 773 ED 018 547 87
Occupational Competency Tests.

TRADE AND INDUSTRIAL EDUCATION
VT 000 669 5
Industrial Cooperative Training Programs.
VT 000 773 ED 018 547 87
Occupational Competency Tests.
VT 000 895 ED 018 551 88
The Status of and Need for Industrial Education in the Public Secondary Schools in Utah.

SUBJECT INDEX

Page

VT 001 010 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts State-Aided Vocational Schools, Class of 1962.
VT 001 024 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts, State-Aided Vocational Schools, Class of 1964.
VT 001 365 ED 016 044 157
Trade and Technical Teacher's Opinions on Inservice Education.
VT 004 295 ED 016 850 93
Development and Utilization of a National Vocational-Technical School Achievement Testing Program Using the Printing Trades as a Pilot Area.
VT 004 855 ED 017 727 28
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education.

TRADE & INDUSTRIAL TEACHERS
VT 001 365 ED 016 044 157
Trade and Technical Teacher's Opinions on Inservice Education.

TRANSPARENCIES
VT 000 779 ED 016 770 122
Transparency Masters for Agricultural Education...Interim Report.

TYPEWRITING
VT 004 397 ED 016 856 170
The Effect of Emphasizing Production Typewriting, Contrasted with Speed Typewriting in Developing Production Typewriting Ability.
VT 004 635 ED 017 714 124
The Vocabulary of Instructional Materials for Typing and Stenographic Training.

TYPISTS
VT 001 331 ED 018 563 58
Selected Entry Office Jobs for the High School Student.

UNEMPLOYED
VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decision to Forego Retraining Under Manpower Development and Training Act of 1962.
VT 003 300 ED 016 810 66
Education and Vocational Training of TEC Claimants.

Page

VT 003 682 ED 014 586 138
A Study of Relationships Between the Employment Service Active File and Unemployment, Greensboro - High Point Area.
VT 003 880 MP 000 289 71
New Evidence on Problems of Reemployment.
VT 004 100 ED 015 320 73
The Unemployed and the Underemployed.
VT 004 260 ED 016 128 78
The Job Hunt.
VT 004 314 ED 015 328 119
No Longer Superfluous.
VT 004 326 ED 015 331 80
Unused Manpower, the Nation's Loss.

UNEMPLOYMENT
VT 003 682 ED 014 586 138
A Study of Relationships Between the Employment Service Active File and Unemployment, Greensboro - High Point Area.

UNEMPLOYMENT INSURANCE
VT 003 300 ED 016 810 66
Education and Vocational Training of TEC Claimants.
VT 003 880 MP 000 289 71
New Evidence on Problems of Reemployment.

UNSKILLED WORKERS
VT 001 090 ED 018 557 146
A Study of Factors in Workers' Decisions to Forego Retraining Under Manpower Development and Training Act of 1962.

VISITING HOMEMAKERS
VT 003 308 ED 016 074 123
Development of a Film on Homemaker Services.

VOCABULARY
VT 004 635 ED 017 714 124
The Vocabulary of Instructional Materials for Typing and Stenographic Training.

VOCATIONAL AGRICULTURE
VT 000 043 ED 017 620 2
The Organization and Utilization of Agricultural Advisory Boards in New York State.
VT 000 083 ED 018 530 168
Teaching Agricultural Mechanics in High School.

SUBJECT INDEX

Page

VT 000 103 ED 018 532 2
Developing Programs in Agricultural Occupations.
VT 000 400 ED 017 625 32
Preparing Students for Employment . in Agriculture.
VT 000 429 ED 018 534 32
A Study of Education Regarding Cooperative Organizations in Rural Areas in 118 Illinois High Schools.
VT 000 474 ED 018 536 86
Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.
VT 000 586 ED 017 628 33
The Development of a Modern Curriculum in Vocational Agriculture.
VT 000 779 ED 016 770 122
Transparency Masters for Agricultural Education...Interim Report.
VT 000 934 ED 017 639 96
Planning Vocational Agricultural Facilities.
VT 001 188 ED 018 559 56
Occupations of South Carolina's Vocational Agriculture Students Completing a Prescribed Course, 1959-63.
VT 001 206 ED 018 560 9
Vocational Agriculture in Transition for Occupational Education.
VT 001 381 ED 016 046 34
The Status of Specialized Courses in Vocational Agriculture.
VT 001 391 ED 018 571 89
Instrument for Evaluating a Department of Vocational Agriculture.
VT 001 714 ED 016 053 16
Handbook for Developing and Operating Agricultural Occupations Programs.
VT 002 889 ED 013 538 169
The Relative Effectiveness of Supplementing Programed Instruction with Blocked Versus Spaced Review.
VT 003 621 41
How Much Instruction in Farm Machinery.
VT 003 674 ED 018 638 42
Education Regarding Credit for Agricultural Production. Report no. 2, Survey of Teachers of Agriculture.
VT 003 946 ED 014 616 42
Post-High School Curriculum for the Grain, Feed, Seed and Farm Supply Industry.
VT 003 950 ED 015 301 44
What Does it Take to Sell Feed.

Page

VT 004 660 ED 016 867 164
University of Illinois Summer Institute for Teachers of Ornamental Horticulture in the Midwestern Section of the United States.

VOCATIONAL AGRICULTURE TEACHERS
VT 000 400 ED 017 625 32
Preparing Students for Employment in Agriculture.
VT 001 261 156
An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents.
VT 001 938 ED 016 781 157
A Role Analysis of the Beginning Teacher of Vocational Agriculture in Ohio.

VOCATIONAL COUNSELING
VT 004 528 ED 017 710 153
Exploratory Study of Information--Processing Procedures and Computer-Based Technology in Vocational Counseling.

VOCATIONAL DIRECTORS
VT 001 089 ED 018 556 146
Leadership for Vocational Education in California.
VT 004 932 ED 017 728 28
The Qualifications and Professional Responsibilities of Vocational Directors at the Local District Level in the State of Utah.

VOCATIONAL EDUCATION
VT 000 099 ED 018 531 172
A Bibliography of Published and Unpublished Vocational and Technical Education Literature.
VT 000 557 ED 018 540 4
A Guide for Part-Time Cooperative Education Programs.
VT 000 672 ED 017 629 5
The Need for Area Vocational Schools in Michigan.
VT 000 873 ED 018 550 6
The Training of Skilled Workers.
VT 000 927 ED 017 638 7
Fact-Finding in Vocational Education.
VT 000 959 ED 018 554 8
Report of the Secretary of Labor on Manpower Research and Training.
VT 001 033 55
Pattern for Progress, An Extension of the Blueprint for Action.

SUBJECT INDEX

Page

VT 001 089 ED 018 556 146
Leadership for Vocational Education in California.

VT 001 103 56
Graduate Follow-Up, 1964.

VT 001 274 ED 017 648 10
A Look at Education for Work in the Omaha Public Schools.

VT 001 334 ED 018 565 135
Research Training Institute for Persons in Vocational Education Participating in Research and Development Activities.

VT 001 362 ED 018 567 58
Survey of Information on Vocational and Technical Education in the State of Illinois.

VT 001 364 ED 018 568 11
Leadership for Vocational Education in California.

VT 001 372 11
Vocational Education in California, 1964-65.

VT 001 392 35
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. First Quarterly Technical Report.

VT 001 393 36
Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. Second Quarterly Technical Report, The Problem of Defining Objectives.

VT 001 447 ED 018 576 12
Leadership for Vocational Education in California--January-February, 1966.

VT 001 486 ED (See Sep '68 RIE) 128
A Report on the Administrator's Conference on Vocational Education.

VT 001 533 MP 000 107 104
Job Corps Enrollee Applicant Medical Record Analysis and Screening.

VT 001 573 ED 018 592 136
Report of a National Vocational-Technical Education Seminar on Research and Curriculum Development.

VT 002 121 ED 017 658 137
Research in Vocational Education.

VT 002 163 ED 016 785 18
Vocational Education in Utah.

VT 002 371 ED 016 063 105
Preparacion, Progreso, Porvenir.

VT 002 944 ED 016 803 159
Review of Research in Vocational Technical Teacher Education.

Page

VT 003 249 ED 017 677 19
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level.

VT 003 260 ED 015 263 65
National Vocational-Technical Education Seminar on Occupational Mobility and Migration.

VT 003 300 ED 016 810 66
Education and Vocational Training of TEC Claimants.

VT 003 361 ED 016 076 107
Survey of Terminees from Out-of-School NYC Projects.

VT 003 431 ED 014 020 66
A Study of the Registered Apprenticeship Program in Wisconsin.

VT 003 522 ED 016 818 67
A Technique for Projection of Occupational-Educational Requirements for State Educational Planning Areas.

VT 003 585 ED 018 635 20
Position Statement on a National Manpower Policy.

VT 003 702 ED 016 824 93
An Evaluation Plan for the Greene Joint Vocational School.

VT 003 823 ED 016 828 139
Continuation of Research Coordinating Unit for Vocational Education in Oklahoma.

VT 003 867 ED 014 614 110
Report on MDTA Institutional Training Program Developments.

VT 004 082 ED 015 306 112
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing.

VT 004 083 MP 000 308 113
Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing. Summary.

VT 004 092 ED 015 314 114
Vocational Readiness for Young Disabled Students in New York City.

VT 004 417 ED 016 858 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume One.

VT 004 418 ED 017 688 24
A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. Volume Two.

VT 004 656 ED 016 144 141
Structuring a Program of Research and Development for Kentucky.

VT 004 939 ED 017 730 125
Educational Media in Vocational and Technical Education.

Page

VT 004 940 ED 017 731 142
Procedural Guide for Writing of Proposals.
VT 005 038 ED 016 873 29
Research Visibility. Vocational Education Is People with Educational Needs Beyond the High School.
VT 005 039 ED 016 874 166
Research Visibility. Vocational Education Is Service--Toward Teaching Excellence.
VT 005 136 173
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.
VT 005 268 ED 017 743 45
Research Visibility. Vocational Education Is Service--Curriculum Development and Instructional Materials.
VT 005 744 ED (See Oct '68 RIE) 173
Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.
VT 005 745 ED (See Oct '68 RIE) 174
Microfiche Collection of Documents Reported in Abstracts of Research and Related Materials in Vocational and Technical Education, Summer 1968.

VOCATIONAL EDUCATION TEACHERS
VT 004 402 ED 017 686 161
An Exploratory Analysis of the Roles and Role Conflicts of Vocational Teachers in Oklahoma.

VOCATIONAL FOLLOWUP
VT 000 667 ED 018 543 87
An Evaluation of Illinois Post-High School Educational Programs in Agriculture.
VT 001 010 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts State-Aided Vocational Schools, Class of 1962.
VT 001 024 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts, State-Aided Vocational Schools, Class of 1964.
VT 001 103 56
Graduate Follow-Up, 1964.
VT 001 188 ED 018 559 56
Occupations of South Carolina's Vocational Agriculture Students Completing a Prescribed Course, 1959-63.

Page

VT 001 597 ED 018 597 90
Santa Cruz County Schools Student Follow-Up Survey.
VT 003 361 ED 016 076 107
Survey of Terminees from Out-of-School NYC Projects.

VOCATIONAL HIGH SCHOOLS
VT 001 207 ED 018 561 57
The Employment Situation of White and Negro Youth in the City of Baltimore.

VOCATIONAL INTERESTS
VT 000 340 ED 018 533 144
A Report of the Student Vocational Interest Surveys in Ohio Schools, July 1964 to June 1965.
VT 001 541 ED 018 588 148
70,000 High School Seniors, Their Educational and Vocational Plans.

VOCATIONAL REHABILITATION
VT 004 060 ED 016 100 110
Work and Mental Disorder.
VT 004 061 111
Work and Mental Disorder. Summary.
VT 004 062 ED 016 101 111
The Remotivation of Chronic Schizophrenic Men Patients.
VT 004 063 112
The Remotivation of Chronic Schizophrenic Men Patients, Abstract.
VT 004 092 ED 015 341 114
Vocational Readiness for Young Disabled Students in New York City.
VT 004 095 ED 012 930 115
The Cooperative Program for Rehabilitation of the Disabled Indian.
VT 004 112 MP 000 329 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program. Summary.
VT 004 113 ED 016 105 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program.
VT 004 161 MP 000 339 118
The Cooperative Program for Rehabilitation of the Disabled Indian. Summary.

SUBJECT INDEX

Page

VOCATIONAL SCHOOLS
VT 001 010 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts State-Aided Vocational Schools, Class of 1962.
VT 001 024 54
Placement of Graduates from Trade and Industrial Programs in Massachusetts, State-Aided Vocational Schools, Class of 1964.

WAGES
VT 000 871 ED 018 549 52
Industry Wage Survey--Banking, November-December 1964.
VT 002 910 ED 017 669 63
A Directory of Community Wage Surveys, 1948-June 1965.

WAREHOUSES
VT 004 332 ED 016 141 83
Impacts of Technological Changes in Warehousing, Phase I.

WHITE COLLAR OCCUPATIONS
VT 004 260 ED 016 128 78
The Job Hunt.

WOMENS EDUCATION
VT 001 125 ED 018 558 147
Counseling Girls and Women.

WORK ATTITUDES
VT 004 158 ED 016 110 118
Work Values of the Handicapped.

WORK EXPERIENCE
VT 004 062 ED 016 101 111
The Remotivation of Chronic Schizophrenic Men Patients.
VT 004 063 112
The Remotivation of Chronic Schizophrenic Men Patients, Abstract.

WORK EXPERIENCE PROGRAMS
VT 001 618 ED 018 600 105
A Plan for an Employment Orientation Program for Retarded Pupils in Public Schools in New Jersey.
VT 002 897 ED 017 665 159
Survey of Practices for College Distributive Education and Retailing Occupational Experience Programs.
VT 003 666 ED 014 581 108
Handicapped Youth Experimental Training Fund.

Page

VT 003 855 ED 015 293 109
Summer Community Youth Work Program.
VT 004 112 MP 000 329 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program. Summary.
VT 004 113 ED 016 105 116
A Project Demonstrating the Effectiveness of Vocational Rehabilitation Services in a Total Psychiatric Care Program.

WORKING WOMEN
VT 001 125 ED 018 558 147
Counseling Girls and Women.
VT 003 662 MP 000 200 21
Child Day Care Service Needs.

WORKSHOPS
VT 000 684 ED 018 546 100
Working with Low-Income Families.
VT 001 840 ED 017 654 169
Programmed Learning in Extension Training.
VT 004 178 ED 015 042 151
Vocational-Educational Information Workshop for Rural Guidance Workers.
VT 004 855 ED 017 727 28
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education.

YOUTH EMPLOYMENT
VT 003 855 ED 015 293 109
Summer Community Youth Work Program.

ED022065

VT 000 205
The Role of Teacher Education Institutions, In-Service Programs.

Mather, Mary E.
Ohio State Univ., Columbus. Center for Voc. Educ.
Pub Date - Mar66
MF AVAILABLE IN VT-ERIC SET. 6p.

SPEECHES, *PROGRAM DEVELOPMENT, *OCCUPATIONAL HOME ECONOMICS, *INSERVICE EDUCATION, *TEACHER EDUCATION, HOME ECONOMICS TEACHERS, REFRESHER COURSES, HOME ECONOMICS EDUCATION, EDUCATIONAL NEEDS,

Teacher education institutions should contribute to the inservice education of home economics teachers on the job who are planning to incorporate education for wage-earning in their programs, home economics teachers returning to the profession who need refresher courses, and home economists, or others who have been at work in business or industry. Ways of doing this are--Make sure that concepts relating to occupational education are built into the appropriate existing courses, graduate or otherwise, conduct workshops, institutes, seminars and conferences with emphasis first on generalized occupational information, and then on the study of particular occupations, Prepare and share curriculum and teaching materials, Provide lists of materials, bibliographies and resource packets for examination and study, Involve graduate students in research projects, and Support and encourage graduates as they put new ideas into practice. The problems encountered by the teachers with this new program seem to fall into two categories--organization and administration, and curriculum and teaching. This paper was presented at a National Seminar for Leaders in Home Economics Education (Columbus, Ohio, March 28-31, 1966). (MS)

VT 000 205

205

ED022065

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

THE CENTER FOR RESEARCH AND LEADERSHIP DEVELOPMENT
IN VOCATIONAL AND TECHNICAL EDUCATION
THE OHIO STATE UNIVERSITY
Columbus, Ohio

Seminar for Home Economics Leaders

The Role of Teacher Education Institutions

In-Service Programs

Mary E. Mather, Associate Professor, Home Economics
Education, Iowa State University

There is no doubt about the importance of in-service education for all groups. Conditions are changing so fast we have to run to keep up. We are getting some needed in-service education here at this Seminar. We in home economics have always felt that our Regional Conferences in home economics education were a valuable source of in-service education. Those of us who have attended one of the five new Regional Conferences held previous to this date for all vocational education leaders probably feel we are again receiving in-service education as we are learning to work in new directions in vocational education.

My part today is to speak of the role of teacher education institutions in regard to in-service education for one particular new dimension of our home economics program, education for wage-earning occupations. As well as integrating new concepts and experiences into our pre-service programs we must make a variety of provisions for aiding teachers already at work.

You might say we have a type of vested interest here since many teachers in our secondary schools are really part of our teacher

VT000205

education staffs. We send our student teachers to them for important learning experiences. Naturally we would like programs in our cooperating schools to demonstrate practices in line with this new dimension in home economics education as well as to have the good practices we have always looked for in our programs of homemaking education. What better way to encourage new teache[illegible] to put new ideas into practice than to see them in operation during student teaching?

In-service education needs are acute right now. We have a big "re-tooling" job to do; but there will always be some need for this. For our purposes today I suggest that we think of these groups of people whom teacher education institutions should serve:

1. Home economics teachers already on the job who are planning to incorporate education for wage-earning in their programs; and
2. Home economics teachers returning to the profession who need refresher courses. These teachers could be, of course, from any level--high school, post-high school, or adult education.

The exact qualifications for teachers of home economics related occupations are still under question in many cases. However, a third group teacher education institutions might be serving could be home economists, or others, who have been at work in business or industry. These people would have an occupational competency, but need study in such areas as curriculum and methods of teaching to develop educational competency and/or to meet certification requirements.

What are some of the means by which teacher education institutions can contribute to this in-service education?

1. One way is to make sure that concepts in relation to occupational education are built into appropriate existing courses, i.e., the courses, graduate or otherwise, for which teachers come to our colleges and universities. Four examples, where I think this challenge should be met, are in courses labeled, Curriculum, Problems and Trends, Evaluation, and Supervision. Evaluation techniques will need to be much broader in scope in order to assess affective and psychomotor skills needed by the wage earner as well as the more familiar cognitive abilities. Supervision techniques should not be limited to ideas for working with student teachers or teachers within one school system or geographic area, but should include supervisory skills for a program of education for occupations. Special courses to meet these needs, i.e., regular credit courses, may be added to curriculum offerings at some time, but this is often a fairly long process.
2. For the present, special workshops, conferences, institutes or seminars are typical ways of providing this in-service education. Summer workshops provide opportunity for involvement on the part of the participants over a longer period of time than short conferences and probably cause better performance on the part of the teacher on the job. However, shorter-term conferences or seminars may give some [illegible] the needed re-orientation to a new set of purposes and circumstances. More than one workshop for a single individual is desirable. Both a beginning or introductory

one to look at the world of work for home economics related occupations in a generalized way, followed by specialized workshops for study of, and planning for, particular occupations seem to be needed.

3. A crying need of teachers is for curriculum and teaching materials in this new area. Preparation of these is a natural part of workshop activity, but personnel at teacher education institutions may do some of this as part of research projects, or some types may be done by graduate assistants who can concentrate on scouting for resources in this area. One example of this type is the annotated bibliography "The Employment Aspect of Home Economics" published last year by two graduate assistants at the University of Illinois. A supplement to this bibliography is now in preparation to bring it up to date.

Sharing of ideas and material, printed or mimeographed, seems of utmost importance. We at the University of Illinois have tried to help with this through one of our major efforts at in-service education, the Illinois Teacher of Home Economics. Last year all issues of Volume VIII were devoted to the subject of the wage-earning emphasis.

4. As well as providing lists of materials or bibliographies which can be sent to teachers, I think everyone would recognize the desirability, if not the necessity, of home economics education departments obtaining the actual materials of importance to occupational education, and having them available for examination and study in their own departmental curriculum and resource centers on the campus.

5. A fifth role that teacher education institutions can take is in relation to research projects. As teachers are studying research methodology in formal courses in degree programs, or in non-credit workshops, help needs to be given for possible research studies in relation to local programs. As research projects in this field are undertaken by teacher education personnel we should endeavor to make provision for graduate assistants, who would likely be public school teachers on leave, to be part of the project and thus learn more about the subject.

6. Teacher education institutions vary in the amount and kind of follow-up service they give their graduates, but I feel that this can be a very significant kind of in-service assistance. Support and encouragement for new programs can, and should, come from teacher education personnel in the colleges as well as from state or area supervisory staff. Let us not turn out our graduates with new ideas and no follow-up support for putting them into practice

Teachers need help with this new dimension of their home economics programs. The problems they report having and the areas in which help seems to be most appreciated, according to a questionnaire study by one of our graduate students, Margaret Dewar, seem to fall into two categories:

1. Organization and administration, and
2. Curriculum and teaching.

Administrative problems include matters of time for schedules, planning, supervision, making contacts; needed equipment, space, facilities, and finances; selection of students and appropriate class sizes; finding job stations for work experiences and transportation problems in getting students there; interpretation of program to students, guidance counselors, parents, other teachers as well as employers; and what report forms to use.

Curriculum and teaching problems include knowing what to teach, finding resource materials, identifying the necessary skills of a job, changing one's own orientation for these courses to that of job training rather than general family living, and focusing one's teaching more on the individual student and her development of the necessary skills for work, rather than teaching in group situations.

Teachers want our help, and we hope that with help more of them might have the spirit expressed by one of Miss Dewar's respondents: "I'm feeling the growing pains, but am loving every minute of it."

VT 000 669
Industrial Cooperative Training Programs, A Handbook for Coordinators.

Bevins, Lynn G.
Tennessee State Dept of Ed, Nashville. Trade and Ind Serv
Pub Date - 63
MF AVAILABLE IN VT-ERIC SET. 144p.

TEACHING GUIDES, *COOPERATIVE EDUCATION, SENIOR HIGH SCHOOLS, *PROGRAM GUIDES, INSTRUCTOR COORDINATORS, PROGRAM COORDINATION, PROGRAM DEVELOPMENT, LAWS, *TRADE AND INDUSTRIAL EDUCATION,

This handbook is designed to give the beginning coordinator a pattern for establishing a program and some guidelines for improving a program by this handbook. It contains the following chapters--(1) Program Defined, (2) The Coordinator and His Responsibilities, (3) The High School Administrator's Responsibilities, (4) Federal and State Regulations, (5) Selecting Student-Learners, (6) Selecting Training Agencies, (7) Student's School and Job Schedule, (8) Placement of Student-Learners, (9) Advisory Committee, (10) The Classroom, (11) Teaching Related Material, (12) Supervising Students on the Job, (13) Grading and Promoting Student-Learners, (14) Reports, (15) Evaluation of the Program, and (16) The Associated Trade and Industrial Clubs of Tennessee. Agreements, application forms, a progress record form, and report forms are included. (PA)

VT 000 669

ED022065

INDUSTRIAL COOPERATIVE TRAINING PROGRAMS

COORDINATOR'S HANDBOOK

TENNESSEE STATE BOARD FOR VOCATIONAL EDUCATION
TRADE AND INDUSTRIAL EDUCATION SERVICE
NASHVILLE
1963

VT 00669

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

INDUSTRIAL COOPERATIVE TRAINING PROGRAMS

A HANDBOOK FOR COORDINATORS

Tennessee State Department of Education
DIVISION OF VOCATIONAL EDUCATION
Trade and Industrial Service
Nashville
1963

FOREWARD

This Bulletin is designed to aid those charged with the local administration and coordination of programs of Trade and Industrial Education referred to as Industrial Cooperative Training programs.

It is not presented in any sense of the word as an all inclusive publication but rather as an aid to a full appreciation in the educational program of the community and to point out procedures which have been found successful in other areas and which may serve as a guide in initiating or improving programs of this type.

This Bulletin is a complete revision of a similar Bulletin published in 1949.

H. C. Colvett
Coordinator
Vocational Education

INTRODUCTORY STATEMENT

In the rapidly changing industrial picture of our state today the value of the Industrial Cooperative Training Program is in direct proportion to the degree of training the Student-Learner can deliver to the various employers in the local communities. The conscientious coordinator, seeking to provide well trained employees to these various employers, encounters many problems and questions. Therefore, the coordinator needs some ready reference which will answer the questions or offer a suggested solution to these problems. It is hoped that this publication will meet such a need.

The publication is designed to accomplish two major goals:

1. To give the beginning coördinator some established pattern by which he can establish his program, and

2. To give the established coordinator some guide lines by which he can improve his program.

Lynn G. Bevins, Regional Supervisor for Trade and Industrial Education, compiled the material and wrote the original draft of certain portions of the Bulletin. All contents, policy statements, and references have been approved by Frank A. Van Eynde, Acting State Director of Trade and Industrial Education.

ACKNOWLEDGMENTS

The writer is indebted to many individuals who have contributed material and suggestions for this Bulletin. Snyder B. Keathley wrote the original handbook and his research has contributed much to the program and the basis of this publication. Professor Joe L. Reed, Teacher Trainer, Industrial Education, University of Tennessee, made available the library facilities of his department and offered valued advice.

The writer is particularly grateful to the State Director of South Carolina and the State Director of Alabama for furnishing copies of the handbook for their states and allowing the information therein to be used as needed.

To the many Coordinators across the State who were contacted with questions and for suggestions, thanks are offered for their response.

TABLE OF CONTENTS

Foreward i

Introductory Statement ii

Acknowledgments iii

Table of Contents iv

Chapter

I. The Industrial Cooperative Training Program 1

II. The Coordinator and His Responsibilities 7

III. The High School Administrator's Responsibility 11

IV. Federal and State Regulations 15

V. Selecting Student-Learners for the Industrial Co-op Program. . 55

VI. Selecting Training Agencies 67

VII. Placement of Student-Learners 73

VIII. Student's School and Job Schedule 81

IX. Advisory Committee 87

X. The Classroom 93

XI. Teaching Related Material 97

XII. Supervising Students on the Job 105

XIII. Grading and Promoting Student-Learners 109

XIV. Reports 113

XV. Evaluation of the Program 127

XVI. The Associated T & I Clubs of Tennessee 137

Chapter I

THE INDUSTRIAL COOPERATIVE TRAINING PROGRAM

The Industrial Cooperative Training Program is a part-time education program. By part-time it means the students participating in the program are in the regular school part of the day and work on a job in the community part of the day under the supervision of the school.

The Smith-Hughes Act for Vocational Education, passed by Congress in 1917, emphasized the importance of part-time education. Every subsequent act for Vocational Education has contained provisions for conducting part-time classes. Although the condition that caused emphasis for part-time education at the time the Smith-Hughes Act was being considered no longer exists, there is no less need for part-time education today, such as the Industrial Cooperative Training Program. It is the type of education that might well be considered, regardless of the size of the school or the size of the community.

The Industrial Cooperative Training Program is a cooperative one between the school and the business or industrial establishments in the community. It is peculiarly designed to fit into any size community. It has operated successfully in communities of 2500 population where the nature of the industries and trades lend themselves well to the program. It has particularly met the needs of the smaller towns and cities in that it enables a vocational program to be conducted in such communities when all possible training agencies are utilized. In many instances it has been the only type of vocational program that small communities have been able to operate. From the standpoint of the number of students available and the cost involved, it is not feasible for small schools to have an all-day trade program. The Co-op Program enables such schools to fulfill, at least in part, the vocational training needs of students going into immediate employment after graduation.

The Industrial Cooperative Training Program fits well into larger schools which may have in operation a day trade department or in a separate trade school. In such instances the Co-op Program supplements the day trade program by enabling the school to offer trade training in special occupations in which very few students are interested, or where only a few workers are needed annually to take care of normal replacements.

Many communities having a day trade program have hesitated to add the Co-op Program for fear it would be a competitor to the trade program. Worked properly, however, the Co-op Program would greatly enlarge the scope of vocational training done by the school and would serve more specifically the occupational desires of many high school students in or out of the day trade vocational program. The larger schools would do well to consider the advantages of the Co-op Program and the part it would fill in making the existing trade program in the school more complete.

The Industrial Cooperative Training Program operates as follows: Students in the last two years of high school, who have reached their sixteenth birthday, are put on jobs in business establishments, industries, and in the trades represented in the community, for a minimum of 15 hours per week. Work experience is obtained on a real job for which the school gives high school credit on the same basis as if it had been obtained in a school shop. The school, in turn, gives related instruction to students participating in the program for which high school credit is given, the same as for any other subject in the school. The related instruction is based specifically on the occupation in which the student is working. Other courses in high school, required or elective, are taken to complete the student's load in regard to high school units required for a high school diploma.

The jobs on which students work are those which require a specific amount of training such as any apprenticeable trade demands. The program is not designed to train mere mechanics, machine tenders or machine operators, the knowledge of which may be learned in a few hours, but is designed to give work experience on all the machines, processes, and departments of the occupation.

One can see that the range of occupational training is almost unlimited in the Industrial Cooperative Training Program. The plan simply means that the walls of the school may be extended to the boundary of the community. Any trade or industrial occupation represented in the community may be given as a school trade course, provided the school is able to obtain the cooperation of the employers in the community.

PURPOSE OF INDUSTRIAL COOPERATIVE TRAINING PROGRAM

1. To provide work experience education for high school students, primarily terminal in nature, in which the schools and industries cooperate in giving the desired training.

2. To afford school, regardless of size, within reason, to offer vocational trade and industrial training.

3. To supplement trade and industrial training in schools that have a vocational trade department or in communities that have a separate vocational trade school.

4. To offer vocational training in specialized areas in which only a few are needed annually or in areas that are not feasible for the school to establish school shops for training.

Advantages of the Industrial Cooperative Training Program

Part-time cooperative trade training provides definite advantages to the student, to the school, to the community, to the employer, and to labor. A partial listing of these advantages follows:

To the Student

1. Offers an opportunity to receive some specific occupational training while attending high school.
2. Offers an opportunity to complete high school and receive the regular diploma with other members of the class.
3. Offers training for boys and girls in a chosen occupation in their local community.
4. Offers an organized plan of training on the job under actual industrial and commercial conditions.
5. Offers an opportunity to secure training at a relatively low cost because it is secured while attending the public school.
6. Establishes definite work habits and attitudes.
7. Makes possible a satisfactory adjustment of work and school activities.
8. Allows for a better correlation of school work and employment because the student recognizes his own needs.
9. Lends encouragement to stay in school until graduation.
10. Offers an opportunity for employment in the local community after completing high school and the training program.
11. Frequently enables students to secure full-time employment with the training agency after completing their course and graduating from high school.
12. Motivates interest in other high school subjects.
13. Develops a sense of responsibility.
14. Provides instruction in safety and good occupational habits.
15. Enables student to stay in school due to his earnings.

16. Enables him to make an intelligent choice of his life's work earlier.

To the School

1. Broadens the curriculum.
2. Helps hold students in school longer.
3. Allows the school to offer occupational training for those who are going to enter an occupation which does not require college training.
4. Provides credits which may be used for college entrance.
5. Enables the school to better meet the training needs of the community.
6. Allows training in a number of occupations at the same time and allows a comparatively low per capita cost.
7. Provides closer cooperation with the community as a whole.
8. Provides a closer correlation with industrial life.
9. Lessens the disciplinary problems of the school.
10. Necessitates a relatively small amount of equipment.
11. Enables other employers to see the needs for more training.
12. Helps in the establishment of evening classes.
13. Permits flexibility in instruction in any occupation, as it may readily be discontinued when the training needs of that occupation are met locally and instruction in other occupations may be substituted without disrupting the program.

To the Community

1. Encourages more young people to remain in their home community after completing high school.
2. Has a part in training for its own needs.
3. Causes more young people to remain in school.
4. Enables the community to give training for those who will enter occupations not requiring college training.

5. Allows training in a number of occupations at the same time and at a comparatively low per capita cost.

6. Secures the services made possible by the National and State Vocation Education Acts.

7. Tends to lessen the unemployment problem because better training is being given its own people.

8. Tends to produce citizens who will feel their responsibility at an early age.

9. Gives increased buying power to its citizens earlier in life.

10. Promotes a closer cooperation between the community and the school.

11. Provides a closer correlation between the school and employment.

To the Employers

1. Gives a better acquaintance with the prospective employees of the community.

2. Provides a better source of better trained and more intelligent employees.

3. Enables them to have a part in the school program.

4. Reduces labor turnover.

5. Enables them to have sources of trained help in peak period.

6. Causes other employees to see the need for more training.

7. Enables employers to receive more direct returns from their school tax dollar.

8. Enables employers to secure up-to-date information about their occupations from the school for themselves and other employees.

9. Enables employers to help guide the program through representation on the advisory committee.

To Labor

1. Offers training which heretofore has not been possible in many instances.

2. Enables labor to help guide the program through representation on the advisory committee.

3. Provides a source of well trained leaders.

4. Furnishes the assurance that the labor market will not be flooded.

5. Offers pre-apprentice training which will be advantageous to both apprentices and journeymen.

6. Opens the way for part-time and evening classes for apprentices and journeymen workers.

WHAT THE INDUSTRIAL COOPERATIVE TRAINING PROGRAM WILL DO

1. Provide an opportunity for a type of on-the-job vocational training that is guided, directed and supervised.

2. Provide an opportunity for students to learn a vocation on the job and earn a high school diploma at the same time.

3. Provide an opportunity for the school and employers to cooperate in an educational program.

4. Enable small communities to have a vocational trade program.

5. Give training on a real job under actual working conditions.

6. Motivate interest of students in other school subjects.

7. Tend to hold students until they complete high school.

8. Enable the school to be better informed in respect to trade and industrial developments in the community.

Chapter II

THE COORDINATOR AND HIS RESPONSIBILITIES

The Industrial Co-operative Training Program brings about an unusual relationship between the school and the employing agencies in the community. The employing agency or training station gives the practical instruction to the students on a real job basis. The school, in turn, gives the students an opportunity to study the related or technical aspects of the job, trade, or occupation in which they work. This unusual arrangement demands a person who can coordinate the activities of the school and the training agencies. The person who is responsible for this coordination, as well as all other aspects of the Co-op Program, is designated as a Coordinator.

Once the Vocational Educational Department of the State is satisfied that the community has a need for, can support, and successfully operate a Co-op Program, the next item of concern is the locating and hiring of a Coordinator. The State Board for Vocational Education reserves the right to pass on the qualifications of prospective coordinators, which according to the Tennessee State Plan for Vocational Education are:

2.23 Qualifications of the Teacher-Coordinator[1]

2.23-1 Training for teaching shall be:

A Bachelor's degree from an accredited four year college or university.

A valid Tennessee Teacher's Professional Certificate with endorsements in at least one high school subject matter area.

At least a minimum of six (6) quarter hours in Approved Professional Industrial Education Cooperative Training.

Completion within a five (5) year period after employment, a minimum of twenty-seven (27) quarter hours of Approved Industrial Education Professional Training. At least one of these courses must be completed each year.

---

[1] Tennessee State Board for Vocational Education, State of Tennessee Plan for Vocational Education, Nashville, Tennessee, 1959, p. 87.

2.23-2 Experience in Trade or Industrial Pursuits

Three (3) years of experience as a wage earner in one or more trade and industrial occupations, including at least a full year of employment in a single wage-earning industrial occupation.

Personal Requirements

The coordinator is responsible for the Industrial Cooperative Training Program. His ability to direct and guide the program, to secure cooperation of employers and, in general, to get the whole community behind the program, will determine the success of the program. The coordinator should have a good personality, should be able to mix well with other people, have ability to think on his feet, be tactful, have ability to meet business leaders without embarrassment, be patient, and must have energy and enthusiasm for his work.

All this means that an ordinary person will not make a good coordinator. Further than that, many coordinators discover that the second and third years are more difficult for the program than the first year. This is true because the enthusiasm for the program and the spirit of general helpfulness wanes after the novelty of the program wears off. The coordinator should make it a practice to meet people. He should know the business and industrial leaders. He should meet individual workmen and discuss the program with them. He should cooperate in an educational way with any and all groups. He should be especially careful not to offend any group.

Some coordinators become a little careless in getting acquainted with parents of students in the Co-op Program. It cannot be emphasized too strongly that the coordinator should visit the parents of the students two or three times during the year. Each year he should widen his acquaintances until it can be truthfully said that he knows, by name at least, every influential person in the community. This will not be a difficult matter in a small community but imposes considerable effort on the coordinator's part in a large community.

The following list is suggestive of how the coordinator may increase his number of acquaintances:

1. Become a member of a service club - Rotary, Kiwanis, Lions, Civitans, etc.

2. Move his membership to a local church and attend regularly.

3. Attend meetings of labor groups if permitted.

4. Be sociable and mingle with all influential groups who work for the betterment of the community.

5. Spend week ends in the community.

6. Look upon the community as HIS HOME.

It might be well for the coordinator to budget his time in order that he may participate in recreational activities on occasion without interfering with his work. The coordinator must bear in mind that a great deal of time and energy will be expended in promoting his program. This will be especially true in the fall and winter when he may have other vocational work, such as evening classes, to supervise. By budgeting his time and following a schedule rigidly, he will not only get more done, but he will also do it with less effort, more thoroughly and still have time for recreation.

It should be evident that no other program in the school is so dependent upon one individual as the Co-op Program. In instances where the program has failed or where results were disappointing, practically all the fault has been with the coordinator. Too often coordinators have lacked enthusiasm for their work, have been indifferent toward promoting the program in the school and in the community, have sought something "easier" or "softer," have taken on so many other responsibilities that they neglect the primary reason for their employment in the school. This has been especially true when coordinators have taken on a burden of classroom work or assisting in coaching one of the athletic teams.

Personal Qualifications of the Coordinator

1. Must have an understanding and enthusiasm for the program.

2. Must have ability to meet and talk with other people unaffectedly.

3. Should like to work and deal with young people.

4. Should like educational work.

5. Should like civic and school enterprises.

6. Should have a flair in doing promotional work.

7. Must have a type of energy that drives him to be successful.

8. Must be able to take disappointment agreeably and without losing enthusiasm.

9. Must be adaptable, be able to meet changing situations readily.

Responsibilities of the Coordinator

There are certain major responsibilities that the coordinator has in carrying on a successful program of Industrial Cooperative Training. These responsibilities are listed below and are discussed in following chapters.

1. Organizing general advisory committee.
2. Selecting students for the program.
3. Selecting Training Agencies.
4. Placing student-learners on the jobs.
5. Helping in making out students' school and job schedules.
6. Supervising student-learners on the job.
7. Teaching related subject matter.
8. Securing cooperation of school faculty.
9. Adjusting differences that may arise.
10. Grading and promoting student-learners.
11. Keeping proper records and making reports.
12. Be familiar with State and Federal Labor Laws.
13. Promoting Vocational Education in general.
14. Organizing and sponsoring Trade and Industrial Clubs.

Chapter III

THE HIGH SCHOOL ADMINISTRATOR'S RESPONSIBILITY

The Importance of the Principal

This manual would not be complete without a word for the high school administrator. His connection with the Cooperative Training Program is very important and a large part of the responsibility for the program's success rests with him.

Points of Guidance for the Principal

If the principal uses the Industrial Cooperative Training Program as a dumping ground for all the misfit students, he dooms it to failure. If the principal looks upon the Co-op Program as an extra-curricular activity, or a class unconnected with the regular school program, he does not correctly interpret its mission. If he regards the coordinator as an individual who simply comes and goes as he wills, or as a person unrelated to the regular faculty, he misinterprets the coordinator's status.

It is important that the Industrial Cooperative Training Program be recognized for what it is, namely, a training program. If it is considered a work program, it loses its true identity, and thus much of its usefulness.

The principal should recognize the Industrial Cooperative Training Program as a regular, and what may become a prominent, part of the school program. He must recognize the coordinator as a bona fide member of the school faculty, available for regular faculty duties, insofar as they do not interfere with the carrying out of his duties connected with the Industrial Cooperative Training Program.

Principal's Importance in Selection of Students

The principal is in a position to lend valuable assistance to the coordinator in the selection of the students who enroll in the Cooperative Training Program. He must be interested and sympathetic. He should not forbid or block any boy or girl who wants to take Industrial Cooperative Training simply because that student happens to be a better-than-average student in English, History, Math, Latin, or Science, or because he comes from a home of better-than-average opportunities.

Fitting the Co-op Related Class into the Schedule

It is a recognized fact that an Industrial Cooperative Training Program can be a problem in making a school class schedule, yet in no case to date has the principal been unable to master the difficulty. It is equally true that a student entering the Co-op Program a week or two after school starts sometimes presents a problem in the rearrangement of his schedule, but few have been the cases wherein the situation hasn't been ably handled by the principal. It is likewise a difficulty when a student returns to regular classes at the end of his probationary period. This type case is very rare, however, if the principal gives his whole-hearted support in aiding the coordinator in the selection of prospective student-learners. These latter difficulties will, in the main, eliminate themselves if the principal and the coordinator, working together, can select and place all the students prior to the end of the first week of school.

List of Items With Which the Principal Can Be Helpful

From the foregoing, it is evident that the principal does play a vital role with regard to the Industrial Cooperative Training Program in his school, and he must feel a deep obligation for the distinct service it renders and aid the program in as many ways as possible, among which are the following:

1. Make schedule to accommodate the Industrial Cooperative Training Program related class. (This includes putting English III, English IV, American History, and any one section subject matter, in particular, where the Co-op student can schedule them.)

2. Recognize the Industrial Cooperative Training Program as a regular and necessary class in the high school curriculum.

3. Schedule all Co-op students in the Industrial Cooperative Training Program related class the same period.

4. Recognize the Coordinator as a regular member of the faculty. (Of course, the Coordinator can facilitate this by his own cooperative spirit.)

5. Cooperate with the Coordinator in the selection of prospective students and in making the school records available to him.

6. Make provision for assembly programs which can be put on by the Co-op class.

7. Visit the Co-op classroom and find out what the students are doing and how they go about their class work.

8. Visit training agencies with and without the coordinator.

9. Insist upon the Coordinator leaving his coordination itinerary in the office before leaving the school each day.

10. Facilitate the procurement of related instructional material.

11. Request copies of the program's monthly report and other reports which the coordinator makes.

12. Know what the coordinator is doing. Offer assistance in making out and following a workable schedule.

13. Be as familiar as possible with the program and its successes and shortcomings.

The Place of Vocational Education in the High School

A few High School Principals have been somewhat afraid for Vocational Education to come into their high school, because they have the conception that the vocational educator and vocational education are unfriendly toward the academic side of education. This is an unfortunate misconception because the *opposite* is true. *It is a fundamental precept and basic philosophy of vocational education that standing alone, it is not functional; that vocational education proposes to supplement and not supplant cultural, academic learning.*

Chapter IV

FEDERAL AND STATE REGULATIONS

The Industrial Cooperative Training Program is a vocational part-time program, and as such must abide by both Federal and State Regulations.

Regulations are set up to safeguard the expenditure of state and federal funds. Since vocational funds are appropriated for a specific kind of education, the regulations are a guarantee that programs are bona-fide vocational education and that schools may be reimbursed for part of their costs.

Federal Regulations

Federal Regulations governing part-time cooperative classes are:

> § 102.79 Part-time cooperative classes. The following provisions apply to the use of funds under the plan for part-time cooperative classes (as defined in § 102.74);
>
> (a) The class must be organized through voluntary cooperative agreements (preferably in writing) between the school and employers, which provide for legal employment of the students, an organized program of training on the job, and supplemental vocational instruction in school.
>
> (b) The class must be composed entirely of persons meeting the minimum age requirement who are enrolled in a day school and legally employed in a trade and industrial pursuit. Those enrolled must have trade and industrial objectives in line with their employment on the job. Such persons enrolled in part-time cooperative classes are called "student-learners." The class may be composed of student-learners all employed in the same, or in different trade and industrial occupations. However, an individual student-learner may be employed and receive training in only one such occupation.
>
> (c) For a student to be considered legally employed for the purpose of this section, his employment must be in conformity with Federal, State and local employment laws and regulations. When employment is in establishments engaged in interstate commerce or in the production of goods for interstate commerce, such employment must be at least at the legal minimum wage, except where authorization is granted by the appropriate Regional Office of the Wage and Hour and Public Contracts Divisions by

certificate for employment at a special minimum wage. In some occupations declared hazardous by the U. S. Department of Labor, student-learners must be 18 years of age unless exemption is secured by appeal to the Secretary, U. S. Department of Labor. Student-learners in any case must receive a monetary wage commensurate with wages paid other employees doing similar work.

(d) Provision must be made for adequate coordination and supervision of the program, and sufficient time must be provided for a coordinator to visit employers and student-learners on the job.

(e) State plans are provided that the student-learner be employed for an average of not less than 15 hours per week during the school year, the major portion of such employment to be during the normal day school hours. This precludes a student attending school full-time and meeting the requirements for employment outside the normal day school hours.

(f) In a program covering two school years, an average of at least one regular class period per day must be devoted to related vocational instruction in classes limited to the cooperative group. In a program covering only one school year, an average of at least two regular class periods a day must be devoted to related vocational subjects in classes limited to the group. Sectional cooperative classes meeting these requirements are permitted as provided in § 102.47. [1]

One can see that the federal regulations apply to both the school and the employer. Both have distinct obligations, which make it all the more imperative that the Industrial Cooperative Training Program be well coordinated and supervised.

Specifically, Federal Regulations say:

1. The plan is a voluntary one between the school and the employer.

2. Student-learners are legally employed.

3. It is an organized, on-the-job training program.

4. Supplemental vocational instruction is to be given in the school.

---

[1] U. S. Department of Health, Education and Welfare, Administration of Vocational Education, Bulletin 1, U. S. Government Printing Office, Washington, D. C., Revised 1958, p. 18-19.

5. Minimum age requirements for employment must be met.

6. Trade and Industrial objectives in line with employment on job must be met.

7. Federal, state and local employment laws must be met.

8. Students working in interstate commerce must be paid the legal minimum wage except where they work under a learner permit. In intrastate employment, a wage commensurate to that paid other employees must be met.

9. Provision must be made for coordination and supervision of the program.

10. Student-learners must be employed an average of 15 hours per week.

11. The major portion of employment is to be during the normal day school hours.

12. On a two year program, student must receive related instruction one hour per day.

13. On a one year program, students must receive related instruction two periods (minimum of 1-1/2 clock hours) per day.

State Regulations

In addition to the Federal Regulations quoted previously, the coordinator should secure a copy of Labor Laws, State of Tennessee, and study them carefully. Below one section is quoted as special emphasis.

Prohibited Occupations for Children Under Eighteen

> 50-712 Prohibited Occupations for Children Under Eighteen. No minor under eighteen (18) years of age shall be employed, permitted or suffered to work:
>
> (a) In setting up, adjusting, oiling, or cleaning machinery; or in proximity to any unguarded belts, machinery or gears;
>
> (b) In or about any mine or quarry;

(c) As a brakeman, engineer, foreman, conductor or motorman upon any railroad or railway, or in the operation of any railway or railroad car as a yardman or in switch tending, gate tending, or in connection with track construction or repair, or as a railroad telegraph operator;

(d) In or about any plant manufacturing explosives or articles containing explosive components, or in the use or transportation of same;

(e) In or about plants manufacturing iron or steel, ore reduction works, smelters, foundries, forging shops, hot rolling mills, or in any place in which the heating, melting or heat treating of metals is carried on;

(f) Logging operations, or in or about sawmills or cooperate stock mills;

(g) In operating or assisting to operate any power-driven woodworking machines or tool, laundry machinery, dough brakes, grinding machinery, power punches or shears, wire or iron straightening or drawing machines, machinery used in the cold rolling of heavy metal stock;

(h) As a driver of any motor vehicle;

(i) In the operation of any elevator, crane or hoist;

(j) In spray painting, or in occupations involving exposure to lead or its compounds or to dangerous or poisonous dyes or chemicals;

(k) In occupations involving exposure to radio active substances;

(l) In any place or establishment in which intoxicating alcohol liquors are served or sold for consumption on the premises or in which such liquors are manufactured or bottled;

(m) In any poolroom;

Except sub-sections (e), (g), and (j) shall not apply to a student-learner between sixteen (16) and eighteen (18) years of age, enrolled in a course of study and training in a cooperative vocational training program under a recognized state or local public educational authority; provided further, that such student-learner be employed under a written agreement on forms furnished and approved by the Commissioner of Labor which shall provide that the work of the student-learner in the occupations therein declared hazardous, as provided by sub-sections (e), (g), and (j) shall be incidental to his training, shall be intermittent and for short periods of time, and shall be under the direct supervision of a qualified and experienced person; that safety instructions be given by the school and correlated by the employer, with on-the-job training; that a schedule of organized and progressive work processes to be performed on the job shall have been prepared. Such a written agreement shall carry the name of the student-learner, and shall be signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State Supervisor of Trade and Industrial Education or his representative. Copies of the agreement shall be in quadruplicate, one copy to be kept on file by the school, one by the employer, one by the State Supervisor, and one copy forwarded to the Department of Labor. This exemption for the employment of a student-learner may be revoked in any individual situation wherein it is found that reasonable precautions have not been observed for the safety of the student-learner, or that the employer of such student-learner has not complied with other provisions relating to the employment of minors as set out by Sections 50-701 through 50-717 of Tennessee Code Annotated. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.[2]

What the Employer Must Understand

At this point it is imperative that every employer clearly understand:

1. That he will pay the student-learner a monetary wage comparable to that paid other beginning employees in the occupation.

2. That the student-learner is to be transferred from one job process to another upon reaching the proficiency level required for satisfactory performance in the occupation. This is called "job progression," or "rotation." The purpose of this rotation is to provide "well rounded training" for the student-learner.

---

[2] Department of Labor, State of Tennessee, Labor Laws, Revised July 1959, Nashville, Tennessee, p. 20-21.

3. That the Fair Labor Standards Act of 1938 prescribed minimum rates of pay for workers engaged in interstate commerce or in the production of goods for use in interstate commerce. Care should be taken that the operators of such businesses realize that the Industrial Cooperative Student-Learner is a regular employee and must receive the minimum wage prescribed by law, unless a special wage exemption certificate is issued.

4. That the student-learner must secure a Social Security number and that the employer and student-learner will pay the taxes appertaining thereto.

5. That if the employer employs an Industrial Cooperative student-learner, this student-learner will count as an employee and the employer automatically becomes liable for the tax feature of the unemployment compensation provision of Social Security legislature.

    In 1954 Federal Law amended to cover employers with four (4) workers in twenty weeks. [3]

6. That the student-learner will work at least three clock hours per day, thus working a minimum of 15 hours per week through the year.

7. That the student-learner will receive related technical training in the school.

8. That the Industrial Cooperative Training Program is a training program and not a money-making venture, an educational rather than an employment project.

The Tennessee State Plan for Vocational Education and The Minimum Rules and Regulations

The material below is quoted from the Tennessee State Plan for Vocational Education, and, Rules, Regulations and Minimum Standards, Tennessee State Board of Education.

Vocational trade, industrial, and technical training is an elective in all schools of the State. It has as one of its purposes:

---

[3] U. S. Department of Labor, Growth of Labor Law in the United States, U. S. Government Printing Office, Washington, D. C., 1962, p, 206.

To provide instruction of a preparatory type in the development of basic manipulative skills, laboratory practice, safety, judgment, technical knowledge, and related industrial information for the purpose of fitting persons for useful employment in trade, technical, or industrial occupations.

This part-time industrial cooperative training is one type of program designed for carrying out this purpose.

In the co-op program the student-learners usually spend the mornings in school. During the afternoons they are employed in cooperating industries in the community for the express purpose of learning the manipulative skills and to gain on-the-job experiences in their chosen vocation.

Only Juniors and Seniors, students at least sixteen (16) years of age, may be considered eligible for enrollment in an Industrial Cooperative Training Program.

All or a part of the senior year of a technician program may be pursued on a cooperative basis which meets the basic standards outlined herein.

The program should be organized and conducted with the advice and counsel of an advisory committee consisting of representatives of employers and employees of the community.

A written agreement (Training Memorandum) on approved forms shall be drawn up for each student-learner, which sets forth the skills and experiences to be acquired on the job and the related technical instruction to be taught in the school in a schedule of processes; the monetary wage to be paid; the specific training time schedule, including daily hours of employment and in school; that the employment is incidental to his training, is to be intermittent and for short periods of time; that he is to be under the direct supervision of a qualified and experienced person; that safety instruction be given by the school and correlated by the employer with on-the-job training; and any other special provisions applicable to the specific student-learner's training program.

The agreement shall be made in quintuplicate, signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State Director or his representative (A Regional Supervisor). One copy of the complete agreement shall be kept on file by the school, one by the employer, one by the State Director, one by the student-learner, and one copy is to be forwarded to the State Department of Labor.

During the time of employment in the on-the-job phase of the program, the student-learner:

Shall be legally employed in an approved trade or industrial occupation which offers real opportunities for training, employment, and advancement for the student-learner, and which is socially respectable in the community.

Shall be employed at a monetary wage at a rate commensurate with wages paid other employees doing similar work.

Shall have legal employment (hours at work) which consists of as many hours, or more, per week, throughout the school year, as he spends in school.

Will not be employed in any case less than fifteen (15) hours per week, the major portion of which, three (3) hours daily, shall be during the normal school hours. This precludes a student attending school full-time and meeting the requirements for employment outside the normal school day hours.

Shall not spend in any instance more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Shall be provided with adequate coordination and supervision of the program and sufficient time must be provided for a coordinator to visit employers and student-learners on the job.

During the half-day in school, the Industrial Cooperative Training Programs are to be organized to provide each student-learner with:

Plan A. Two years of training with one regular period per day of related vocational instruction, pertaining to his occupation, in classes limited to this group and taught by the coordinator; or

Plan B. One year of training with two regular class periods per day (minimum of 1-1/2 clock hours) of related vocational instruction in classes limited to the group and taught by the coordinator; and

Two regular subjects (usually required) toward graduation.

Note 1. Industrial Cooperative Programs enrolling only Student-Learners in approved trade, industrial or technical occupations, under Plan A or B above, and whose coordinator devotes his full time to the Cooperative Program, may be considered a 100% vocational trade and industrial education program and reimbursed as such.

Note 2. Cooperative programs enrolling at least fifty (50) percent of the student-learners in approved trade, industrial or technical occupations, and the remainder in other types of occupations having a recognized learning period of at least one (1) year;

Conducts separate related vocational instruction classes for the two groups; the coordinator devotes his entire time to the cooperative programs; meets all other requirements of an industrial cooperative program, may be considered a part-time trade and industrial education program and be reimbursed as such.

Note 3. Industrial Cooperative Programs enrolling only student-learners as in Note 1, who have an insufficient number to warrant the full time of a coordinator, may be considered a part-time vocational trade and industrial education program and be reimbursed as such. The coordinator must be free to carry on his coordination duties during at least the last two class periods of the school day.

Two units of high school credit per year may be granted for the combination (on-the-job training in employment and the related vocational instruction in the school) phases of industrial cooperative training. Two, three, or four units may be presented for graduation.

A qualified teacher-coordinator shall head the program, (See "Tennessee Regulations for Certification of Teachers.")

Part-Time Cooperative Training Programs

Non-reimbursed part-time cooperative training programs shall operate under the rules and regulations governing the operation of reimbursed part-time cooperative training programs.

Forms to be Used in Meeting the Requirements of Federal and State Regulations

There are several forms that must be executed by the coordinator and/or the student-learner to fulfill the requirements of the various regulations. These forms are reproduced and discussed individually as the concluding part of this chapter.

Training Memorandum

The Training Memorandum is a five-copy, carbon slip-sheeted, form. Each copy is marked in the lower right hand corner of the form as to the distribution of the various copies. If the form is typed, all copies are very legible; however, it should be noted that if the form is filled out by hand, a ball point pen is recommended and the form should be placed on a hard, smooth surface with a steady pressure exerted, heavy enough to assure the impression on the fifth copy. This is important for those who have to sign the form. Most coordinators find it convenient to carry the form on a clip-board, along with a good ball point pen, when it is taken to the employer for his signature. In doing this, uniformity of signatures is usually easier to secure.

All blanks should be filled as requested on the form. Where occupational title is called for, this information should come from T & I Memo OT-104c, revised 8-15-63. This memo will provide correct occupational title and also the correct code number for reporting purposes.

It is important to check the class hours and the hours in the employment schedule. In no case should these total more than forty-eight (48) hours.

After the form is completely filled out, it is not considered a complete Training Memorandum until a complete Schedule of Processes is attached to, and becomes a part of, the Training Memorandum. A sample Schedule of Processes follows this form to show the Training Memorandum in its entirety.

The completed Training Memorandum, with two (2) copies of the Schedule of Processes attached, should be sent to the Regional Supervisor of Trade and Industrial Education for your region. He will check the form for accuracy and, if found satisfactory, will sign the form for the State Director. He will retain his copy and the copy for the Department of Labor and the two copies of the Schedule of Processes. The other three copies will be returned to the coordinator who should then attach a copy of the Schedule of Processes to each of these copies and give the student his copy, the employer his copy and file the school's copy.

DO NOT ALTER THIS SLIP-SHEET SET.

Fill Out Completely, Have Signed, Attach Two (2) Copies of Schedule of Processes and Mail Complete To Regional T & I Supervisor By Oct. 15th or Within 30 Days After S-L Enters

---

T & I FORM ICT-TM
6/61—5M

TENNESSEE INDUSTRIAL CO-OPERATIVE TRAINING
TRAINING MEMORANDUM

1. This Industrial Cooperative Program is organized to provide ______________________________, the student-learner with:
(Check the Plan applying)

   Plan A. __________ Two years of training with one regular class period per day of related vocational instruction in classes limited to industrial cooperative student-learners; or

   Plan B. __________ One year of training with two regular class periods (minimum 1½ clock hours) per day of related vocational instruction in classes limited to the group.

2. The training agency agrees to employ the above named coop student-learner; to provide on-the-job training as set out herein and the schedule of processes attached to and made a part of this training agreement, for the expressed purpose of his or her learning the manipulative skills and acquiring experience in the

   occupation of ______________________________

3. The student-learner is to be given the opportunity to progress through the various phases of the occupation under direct and close supervision of a qualified and experienced person.

4. The training agency agrees not to discharge any regular employee because of additional services that might be rendered by the student-learner while in training.

5. The student-learner shall conform to and be subject to all rules and regulations adopted from time to time by the training agency for its regular employees, unless such rules and regulations are contrary to the terms of this memorandum.

6. The parents of the student-learner will not be relieved from any responsibility with regard to the personal conduct of the student while in training.

7. The training may be discontinued at any time by any person singing this memorandum, but each agrees to notify the other parties in advance.

8. Safety instruction shall be given by the school and correlated by the employer with on-the-job training.

9. A schedule of organized and progressive work processes to be performed on the job and the related technical instruction, including occupational safety and hygiene, to be taught in the school based on an analysis of the occupation, shall be prepared as each student-learner's course of study and be made a part of this Training Memorandum.

10. This Training Memorandum is to be prepared in quintuplicate and signed by each party for whom a place is provided. After securing signatures this entire slip-sheet set with at least two (2) copies of the Schedule of Processes attached, is to be forwarded to the Regional Supervisor of Trade and Industrial Education. If in order, he will keep the State office copy, forward a copy to the State Department of Labor and return the others to the Coordinator for distribution, as designated with their Schedule of Processes attached.

11. The legal employment (hours at work) of each student-learner will consist of as many or more hours per week, throughout the school year, as he spends in school:
    a. In no case will the employment be less than fifteen (15) hours per week, the major portion of which will be during school hours;
    b. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days; and
    c. In all cases a monetary wage shall be paid each student-learner, at a rate commensurate with wages paid other employees doing similar work.

12. Two units toward high school graduation may be allowed for the combined related study and work experience when carried on successfully for a school year. Nothing less than a school year will be recognized for credit.

13. The work of the student-learner in an occupation which has been declared hazardous, as provided by sub-sections (e), (g), and (i) (of amended Section 50-712 of Tennessee Code Annotated and the U. S. Secretary of Labor, Hazardous Occupations Orders Nos. 5, 8, and 12), shall be incidental to his training, shall be intermittent and for short periods of time.

14. In order to secure the maximum effectiveness from the related study the local school authorities have employed a coordinator who will make visits to the place of employment, in order to correlate school instruction with the on-the-job experience.

PLACEMENT INFORMATION

CHECK THOSE THAT APPLY: Male________; Female________; White________; Negro________; Junior________; Senior________; Post Graduate________

Student-Learner's Home Address______________________________ Telephone______________ Social Security Number______________

Date of Birth______________________19____ Age Last Birthday______ Date Entered Co-Op Program ______________________19______

Training Agency______________________________ Address______________________________

Telephone______________ Contact Official______________________________ Date of Placement at this Agency______________________19______

Length of training period __________ year(s). Lenght of probationary period.__________ weeks.

Has exemption for less than minimum wage been applied for? Yes____ No____ From ______________19______ to ______________19______

Compensation: First Year: 1st__________Hours__________Cents per Hour. Second Year: 1st__________Hours__________Cents per Hour.

CLASSROOM SCHEDULE						EMPLOYMENT SCHEDULE			
NO.	PERIOD TIME	INSTRUCTOR	SUBJECT	HRS. RELATED	HRS. OTHER	DAY	TIME ON DUTY	TIME OFF DUTY	NO. HOURS
0						Mon.			
1						Tues.			
2						Wed.			
3						Thurs.			
4						Fri.			
5						Sat.			
6						Sun.			
			DAILY TOTALS					WEEKLY TOTAL	

We, the undersigned, agree to follow this plan of training as outlined for the above named S.L. and the Schedule of Processes attached hereto and made a part of this training program:

For Training Agency______________________________ Student-Learner______________________________

Parent or Guardian______________________________ I.C.T. Coordinator______________________________

Principal of School______________________________ Approved by______________________for State Director

Trade and Industrial Education, Date______________________,19______ Mailed To Dept. of Labor______________________, 19______

THIS TRAINING MEMORANDUM IS NOT COMPLETE WITHOUT SCHEDULE OF PROCESSES ATTACHED

Conducted in Cooperation with the Tennessee State Department of Education, Division of Vocational Education, Trade and Industrial Service, Nashville.

EMPLOYERS COPY

Coordinator______________ Training Agency______________ Year______ Code: T&I______ Non T&I______

City

School

Occupation

Student-Learner

TENNESSEE VOCATIONAL INDUSTRIAL PART-TIME CO-OPERATIVE TRAINING PROGRAM
—MINIMUM STANDARDS*—

OF

THE TENNESSEE STATE PLAN FOR VOCATIONAL EDUCATION AND THE RULES AND REGULATIONS

Vocational trade, industrial, and technical training is an elective in all schools of the State except the large vocational and/or technical high schools. It has as one of its purposes:

To provide instruction of a preparatory type in the development of basic manipulative skills, laboratory practice, safety, judgement, technical knowledge, and related industrial information for the purpose of fitting persons for useful employment in trade, technical, or industrial occupations.

This part-time industrial coop training is one type of program designed to carry out this purpose.

In the coop program the student-learners usually spend the mornings in school. During the afternoon they are employed in cooperating industries in the community for the express purpose of learning the manipulative skills and to gain on-the-job experiences in their chosen vocation.

Only juniors and seniors, students at least sixteen (16) years of age, may be considered eligible for enrollment in an industrial coop program.

All or a part of the senior year of a technician type program may be pursued on a cooperative basis which meets the basic standards outlined herein.

The program should be organized and conducted with the advice and counsel of an advisory committee consisting of representatives of employers and employees of the community.

A written training agreement (training memorandum), on approved forms shall be drawn up for each student-learner, which sets forth the skills and experiences to be acquired on the job and the related technical instruction to be taught in the school in a schedule of processes; the monetary wage to be paid; the specific training time schedule, including daily hours of employment and in school; that the employment is incidental to his training, is to be intermittent and for short periods of time; that he is to be under the direct and close supervision of a qualified and experienced person; that safety instruction shall be given by the school and correlated by the employer with on-the-job training; and any other special provisions applicable to the specific student-learner's training program.

The agreement shall be made in quadruplicate or quintuplicate, signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State Director of Trade and Industrial Education or his representative (a District Supervisor). One copy of the complete agreement shall be kept on file by the school, one by the employer, one by the State Director and in cases where the employment is in a hazardous occupation, one copy is to be forwarded to the State Department of Labor.

During the time of employment in the on-the-job phase of the program, the student-learner:

Shall be legally employed in an approved trade or industrial occupation which offers real opportunities for training, employment, and advancement for the student-learner, and which is socially respectable in the community.

Shall be employed at a monetary wage at a rate commensurate with wages paid other employees doing similar work.

The legal employment (hours at work) of each student-learner shall consist of as many or more hours per week, throughout the school year, as he spends in school.

In no case will the employment be less than fifteen (15) hours per week, the major portion of which, three (3) hours daily, shall be during normal day school hours. This precludes a student attending school full-time and meeting the requirements for employment outside the normal day school hours.

In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Provision shall be made for adequate coordination and supervision of the program and sufficient time must be provided for a coordinator to visit employers and student-learners on the job.

During the half-day in school, the Industrial Cooperative Programs are to be organized to provide each student-learner with:

Plan A. Two years of training with one regular class period per day of related vocational instruction, pertaining to his occupation, in classes limited to this group and taught by the coordinator; or

Plan B. One year of training with two regular class periods per day (minimum of 1½ clock hours) of related vocational instruction in classes limited to the group and taught by the coordinator; and

Two regular subjects (usually required) toward graduation.

Note 1. Industrial Cooperative Programs enrolling only student-learners in approved trade, industrial, or technical occupations, under Plan A or B above, and whose coordinator devotes his full-time to the Cooperative program, may be considered a 100% vocational trade and industrial education program and reimbursed as such.

Note 2. Cooperative programs enrolling at least fifty (50) per cent of the student-learners in approved trade, industrial or technical occupations and the remainder in other types of occupations having a recognized learning period of at least one (1) year;

Conducts separate related vocational instruction classes for the two groups; the coordinator devotes his entire time to the cooperative programs; meet all other requirements of an industrial cooperative program, may be considered a part-time vocational trade and industrial education program and reimbursed as such.

Note 3. Industrial Cooperative programs enrolling only student-learners as in Note 1, but an insufficient number to warrant the full-time of a coordinator may be considered a part-time vocational trade and industrial education program and reimbursed as such. The coordinator must be free to carry on his coordination duties during at least the last two class periods of the school day.

Two units of high school credit per year may be granted for the combination (on-the-job training in employment and the related vocational instruction in the school) phases of industrial coop training. Two, three, or four units may be presented for graduation.

A qualified teacher-coordinator shall head up the program. (See "Tennessee Regulations for Certification of Teachers.")

PART-TIME COOPERATIVE TRAINING PROGRAMS

Non-reimbursed part-time cooperative training programs shall operate under the rules and regulations governing the operation of reimbursed part-time cooperative training programs.

THE TENNESSEE STATE DEPARTMENT OF LABOR
PROHIBITED OCCUPATIONS FOR CHILDREN UNDER EIGHTEEN

50-712. Prohibited occupations for children under eighteen. No minor under eighteen (18) years of age shall be employed, permitted or suffered to work:

(a) In setting up, adjusting, oiling, or cleaning machinery; in proximity to any unguarded belts, machinery or gearing;

(b) In or about any mine or quarry;

(c) As a brakeman, engineer, fireman, conductor or motorman upon any railroad or railway, or in the operation of any railway or railroad car or as a yardman or in switch tending, gate tending, or in connection with track construction or repair, or as a railroad telegraph operator;

(d) In or about any plant manufacturing explosives or articles containing explosive components, or in the use or transportation of same;

(e) In or about plants manufacturing iron or steel, ore reduction works, smelters, foundries, forging shops, hot rolling mills, or in any place in which the heating, melting or heat treatment of metals is carried on;

(f) Logging operations, or in or about sawmills or cooperate stock mills;

(g) In operating or assisting to operate any power-driven woodworking machine or tool, laundry machinery, dough brakes, grinding machinery, power punches or shears, wire or iron straightening or drawing machines, machinery used in the cold rolling of heavy metal stock;

(h) As a driver of any motor vehicle;

(i) In the operation of any elevator, crane or hoist;

(j) In spray painting, or in occupations involving exposure to lead or its compounds or to dangerous or poisonous dyes or chemicals;

(k) In occupations involving exposure to radio-active substances;

(l) In any place or establishment in which intoxicating alcoholic liquors are served or sold for consumption on the premises or in which such liquors are manufactured or bottled;

(m) In any poolroom;

Except sub-sections (e), (g) and (j) shall not apply to a student-learner between sixteen (16) and eighteen (18) years of age, enrolled in a course of study and training in a cooperative vocational training program under a recognized State or local public educational authority; provided further, that such student-learner be employed under a written agreement on forms furnished and approved by the Commissioner of Labor which shall provide that the work of the student-learner in the occupations therein declared hazardous, as provided by sub-sections (e), (g) and (j) shall be incidental to his training, shall be intermittent and for short periods of time, and shall be under the direct and close supervision of a qualified and experienced person; that safety instructions shall be given by the school and correlated by the employer with on-the-job training; and that a schedule of organized and progressive work processes to be performed on the job shall have been prepared. Such a written agreement shall carry the name of the student-learner, and shall be signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State supervisor of trade and industrial education or his representative. Copies of the agreement shall be in quadruplicate, one copy to be kept on file by the school, one by the employer, one by the State supervisor, and one copy forwarded to the Department of Labor. This exemption for the employment of a student-learner may be revoked in any individual situation wherein it is found that reasonable precautions have not been observed for the safety of the student-learner, or that the employer of such student-learner has not complied with other provisions relating to the employment of minors as set out by Sections 50-701 through 50-717 of Tennessee Code Annotated. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Footnote: These exemptions apply only to student-learners engaged in a bona fide cooperative training program conducted by a public school meeting the standards of the Tennessee State Plan for Vocational Education and the Rules and Regulations of the State Board of Education.

Inquiries regarding this program should be addressed to the State Director, Trade and Industrial Education, Division of Vocational Education, 116 Cordell Hull Building, Nashville, Tennessee.

---

*This material is quoted from the following official documents, State Department of Education, Cordell Hull Building, Nashville 3, Tennessee:

(a) The Tennessee State Plan For Vocational Education, Section V, Trade and Industrial Education, Tennessee State Board For Vocational Education, June, 1959.

(b) Rules, Regulations and Minimum Standards, Tennessee State Board of Education, July, 1959.

REMARKS

T & I FORM ICT-TM
6/61—5M

TENNESSEE INDUSTRIAL CO-OPERATIVE TRAINING
TRAINING MEMORANDUM

1. This Industrial Cooperative Program is organized to provide ______________________ the student-learner with: (Check the Plan applying)

   Plan A. __________ Two years of training with one regular class period per day of related vocational instruction in classes limited to industrial co-operative student-learners; or

   Plan B. __________ One year of training with two regular class periods (minimum 1½ clock hours) per day of related vocational instruction in classes limited to the group.

2. The training agency agrees to employ the above named coop student-learner; to provide on-the-job training as set out herein and the schedule of processes attached to and made a part of this training agreement, for the expressed purpose of his or her learning the manipulative skills and acquiring experience in the occupation of ______________________

3. The student-learner is to be given the opportunity to progress through the various phases of the occupation under direct and close supervision of a qualified and experienced person.

4. The training agency agrees not to discharge any regular employee because of additional services that might be rendered by the student-learner while in training.

5. The student-learner shall conform to and be subject to all rules and regulations adopted from time to time by the training agency for its regular employees, unless such rules and regulations are contrary to the terms of this memorandum.

6. The parents of the student-learner will not be relieved from any responsibility with regard to the personal conduct of the student while in training.

7. The training may be discontinued at any time by any person singing this memorandum, but each agrees to notify the other parties in advance.

8. Safety instruction shall be given by the school and correlated by the employer with on-the-job training.

9. A schedule of organised and progressive work processes to be performed on the job and the related technical instruction, including occupational safety and hygiene, to be taught in the school based on an analysis of the occupation, shall be prepared as each student-learner's course of study and be made a part of this Training Memorandum.

10. This Training Memorandum is to be prepared in quintuplicate and signed by each party for whom a place is provided. After securing signatures this entire slip-sheet set with at least two (2) copies of the Schedule of Processes attached, is to be forwarded to the Regional Supervisor of Trade and Industrial Education. If in order, he will keep the State office copy, forward a copy to the State Department of Labor and return the others to the Coordinator for distribution, as designated with their Schedule of Processes attached.

11. The legal employment (hours at work) of each student-learner will consist of as many or more hours per week, throughout the school year, as he spends in school:
    a. In no case will the employment be less than fifteen (15) hours per week, the major portion of which will be during school hours;
    b. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days; and
    c. In all cases a monetary wage shall be paid each student-learner, at a rate commensurate with wages paid other employees doing similar work.

12. Two units toward high school graduation may be allowed for the combined related study and work experience when carried on successfully for a school year. Nothing less than a school year will be recognized for credit.

13. The work of the student-learner in an occupation which has been declared hazardous, as provided by sub-sections (e), (g), and (j) (of amended Section 50-712 of Tennessee Code Annotated and the U. S. Secretary of Labor, Hazardous Occupations Orders Nos. 5, 8, and 12), shall be incidental to his training, shall be intermittent and for short periods of time.

14. In order to secure the maximum effectiveness from the related study the local school authorities have employed a coordinator who will make visits to the place of employment, in order to correlate school instruction with the on-the-job experience.

PLACEMENT INFORMATION

CHECK THOSE THAT APPLY: Male________; Female________; White________; Negro________; Junior________; Senior________; Post Graduate________

Student-Learner's Home Address______________________ Telephone____________ Social Security Number____________

Date of Birth____________19______ Age Last Birthday________ Date Entered Co-Op Program ____________19______

Training Agency______________________ Address______________________

Telephone__________ Contact Official______________________ Date of Placement at this Agency____________19______

Length of training period __________ year(s). Lenght of probationary period__________ weeks.

Has exemption for less than minimum wage been applied for? Yes______ No______ From ____________19______, to ____________19______

Compensation: First Year: 1st__________Hours__________Cents per Hour. Second Year: 1st__________Hours__________Cents per Hour.

CLASSROOM SCHEDULE						EMPLOYMENT SCHEDULE			
NO.	PERIOD TIME	INSTRUCTOR	SUBJECT	HRS. RELATED	HRS. OTHER	DAY	TIME ON DUTY	TIME OFF DUTY	NO. HOURS
0						Mon.			
1						Tues.			
2						Wed.			
3						Thurs.			
4						Fri.			
5						Sat.			
6						Sun.			
			DAILY TOTALS					WEEKLY TOTAL	

We, the undersigned, agree to follow this plan of training as outlined for the above named S.L. and the Schedule of Processes attached hereto and made a part of this training program:

For Training Agency______________________ Student-Learner______________________

Parent or Guardian______________________ I.C.T. Coordinator______________________

Principal of School______________________ Approved by______________________for State Director

Trade and Industrial Education, Date______________________, 19______. Mailed To Dept. of Labor______________________, 19______.

THIS TRAINING MEMORANDUM IS NOT COMPLETE WITHOUT SCHEDULE OF PROCESSES ATTACHED

Conducted in Cooperation with the Tennessee State Department of Education, Division of Vocational Education, Trade and Industrial Service, Nashville.

STUDENTS COPY

Coordinator______
City______
School______
Training Agency______
Occupation______
Year______
Code: T&I______
Student-Learner______
Non T&I

TENNESSEE VOCATIONAL INDUSTRIAL PART-TIME CO-OPERATIVE TRAINING PROGRAM

—MINIMUM STANDARDS*—

OF

THE TENNESSEE STATE PLAN FOR VOCATIONAL EDUCATION AND THE RULES AND REGULATIONS

Vocational trade, industrial, and technical training is an elective in all schools of the State except the large vocational and/or technical high schools. It has as one of its purposes:

To provide instruction of a preparatory type in the development of basic manipulative skills, laboratory practice, safety, judgement, technical knowledge, and related industrial information for the purpose of fitting persons for useful employment in trade, technical, or industrial occupations.

This part-time industrial coop training is one type of program designed to carry out this purpose.

In the coop program the student-learners usually spend the mornings in school. During the afternoon they are employed in cooperating industries in the community for the express purpose of learning the manipulative skills and to gain on-the-job experiences in their chosen vocation.

Only juniors and seniors, students at least sixteen (16) years of age, may be considered eligible for enrollment in an industrial coop program.

All or a part of the senior year of a technician type program may be pursued on a cooperative basis which meets the basic standards outlined herein.

The program should be organized and conducted with the advice and counsel of an advisory committee consisting of representatives of employers and employees of the community.

A written training agreement (training memorandum), on approved forms shall be drawn up for each student-learner, which sets forth the skills and experiences to be acquired on the job and the related technical instruction to be taught in the school in a schedule of processes; the monetary wage to be paid; the specific training time schedule, including daily hours of employment and in school; that the employment is incidental to his training, is to be intermittent and for short periods of time; that he is to be under the direct and close supervision of a qualified and experienced person; that safety instruction shall be given by the school and correlated by the employer with on-the-job training; and any other special provisions applicable to the specific student-learner's training program.

The agreement shall be made in quadruplicate or quintuplicate, signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State Director of Trade and Industrial Education or his representative (a District Supervisor). One copy of the complete agreement shall be kept on file by the school, one by the employer, one by the State Director and in cases where the employment is in a hazardous occupation, one copy is to be forwarded to the State Department of Labor.

During the time of employment in the on-the-job phase of the program, the student-learner:

Shall be legally employed in an approved trade or industrial occupation which offers real opportunities for training, employment, and advancement for the student-learner, and which is socially respectable in the community.

Shall be employed at a monetary wage at a rate commensurate with wages paid other employees doing similar work.

The legal employment (hours at work) of each student-learner shall consist of as many or more hours per week, throughout the school year, as he spends in school.

In no case will the employment be less than fifteen (15) hours per week, the major portion of which, three (3) hours daily, shall be during normal day school hours. This precludes a student attending school full-time and meeting the requirements for employment outside the normal day school hours.

In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Provision shall be made for adequate coordination and supervision of the program and sufficient time must be provided for a coordinator to visit employers and student-learners on the job.

During the half-day in school, the Industrial Cooperative Programs are to be organized to provide each student-learner with:

Plan A. Two years of training with one regular class period per day of related vocational instruction, pertaining to his occupation, in classes limited to this group and taught by the coordinator; or

Plan B. One year of training with two regular class periods per day (minimum of 1½ clock hours) of related vocational instruction in classes limited to the group and taught by the coordinator; and

Two regular subjects (usually required) toward graduation.

Note 1. Industrial Cooperative Programs enrolling only student-learners in approved trade, industrial, or technical occupations, under Plan A or B above, and whose coordinator devotes his full-time to the Cooperative program, may be considered a 100% vocational trade and industrial education program and reimbursed as such.

Note 2. Cooperative programs enrolling at least fifty (50) per cent of the student-learners in approved trade, industrial or technical occupations and the remainder in other types of occupations having a recognized learning period of at least one (1) year;

Conducts separate related vocational instruction classes for the two groups; the coordinator devotes his entire time to the cooperative programs; meet all other requirements of an industrial cooperative program, may be considered a part-time vocational trade and industrial education program and reimbursed as such.

Note 3. Industrial Cooperative programs enrolling only student-learners as in Note 1, but an insufficient number to warrant the full-time of a coordinator may be considered a part-time vocational trade and industrial education program and reimbursed as such. The coordinator must be free to carry on his coordination duties during at least the last two class periods of the school day.

Two units of high school credit per year may be granted for the combination (on-the-job training in employment and the related vocational instruction in the school) phases of industrial coop training. Two, three, or four units may be presented for graduation.

A qualified teacher-coordinator shall head up the program. (See "Tennessee Regulations for Certification of Teachers.")

PART-TIME COOPERATIVE TRAINING PROGRAMS

Non-reimbursed part-time cooperative training programs shall operate under the rules and regulations governing the operation of reimbursed part-time cooperative training programs.

THE TENNESSEE STATE DEPARTMENT OF LABOR

PROHIBITED OCCUPATIONS FOR CHILDREN UNDER EIGHTEEN

50-712. **Prohibited occupations for children under eighteen.** No minor under eighteen (18) years of age shall be employed, permitted or suffered to work:

(a) In setting up, adjusting, oiling, or cleaning machinery; in proximity to any unguarded belts, machinery or gearing;

(b) In or about any mine or quarry;

(c) As a brakeman, engineer, fireman, conductor or motorman upon any railroad or railway, or in the operation of any railway or railroad car or as a yardman or in switch tending, gate tending, or in connection with track construction or repair, or as a railroad telegraph operator;

(d) In or about any plant manufacturing explosives or articles containing explosive components, or in the use or transportation of same;

(e) In or about plants manufacturing iron or steel, ore reduction works, smelters, foundries, forging shops, hot rolling mills, or in any place in which the heating, melting or heat treatment of metals is carried on;

(f) Logging operations, or in or about sawmills or cooperate stock mills;

(g) In operating or assisting to operate any power-driven woodworking machine or tool, laundry machinery, dough brakes, grinding machinery, power punches or shears, wire or iron straightening or drawing machines, machinery used in the cold rolling of heavy metal stock;

(h) As a driver of any motor vehicle;

(i) In the operation of any elevator, crane or hoist;

(j) In spray painting, or in occupations involving exposure to lead or its compounds or to dangerous or poisonous dyes or chemicals;

(k) In occupations involving exposure to radio-active substances;

(l) In any place or establishment in which intoxicating alcoholic liquors are served or sold for consumption on the premises or in which such liquers are manufactured or bottled;

(m) In any poolroom;

Except sub-sections (e), (g) and (j) shall not apply to a student-learner between sixteen (16) and eighteen (18) years of age, enrolled in a course of study and training in a cooperative vocational training program under a recognized State or local public educational authority; provided further, that such student-learner be employed under a written agreement on forms furnished and approved by the Commissioner of Labor which shall provide that the work of the student-learner in the occupations therein declared hazardous, as provided by sub-sections (e), (g) and (j) shall be incidental to his training, shall be intermittent and for short periods of time, and shall be under the direct and close supervision of a qualified and experienced person; that safety instructions shall be given by the school and correlated by the employer with on-the-job training; and that a schedule of organized and progressive work processes to be performed on the job shall have been prepared. Such a written agreement shall carry the name of the student-learner, and shall be signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State supervisor of trade and industrial education or his representative. Copies of the agreement shall be in quadruplicate, one copy to be kept on file by the school, one by the employer, one by the State supervisor, and one copy forwarded to the Department of Labor. This exemption for the employment of a student-learner may be revoked in any individual situation wherein it is found that reasonable precautions have not been observed for the safety of the student-learner, or that the employer of such student-learner has not complied with other provisions relating to the employment of minors as set out by Sections 50-701 through 50-717 of Tennessee Code Annotated. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Footnote: These exemptions apply only to student-learners engaged in a bona fide cooperative training program conducted by a public school meeting the standards of the Tennessee State Plan for Vocational Education and the Rules and Regulations of the State Board of Education.

Inquiries regarding this program should be addressed to the State Director, Trade and Industrial Education, Division of Vocational Education, 116 Cordell Hull Building, Nashville, Tennessee.

REMARKS

---

*This material is quoted from the following official documents, State Department of Education, Cordell Hull Building, Nashville 3, Tennessee:

(a) The Tennessee State Plan For Vocational Education, Section V, Trade and Industrial Education, Tennessee State Board For Vocational Education, June, 1959.

(b) Rules, Regulations and Minimum Standards, Tennessee State Board of Education, July, 1959.

T & I FORM ICT-TM
6/61—5M

TENNESSEE INDUSTRIAL CO-OPERATIVE TRAINING
TRAINING MEMORANDUM

1. This Industrial Cooperative Program is organized to provide ______________________________, the student-learner with:
(Check the Plan applying)

Plan A. __________. Two years of training with one regular class period per day of related vocational instruction in classes limited to industrial co-operative student-learners; or

Plan B. __________. One year of training with two regular class periods (minimum 1½ clock hours) per day of related vocational instruction in classes limited to the group.

2. The training agency agrees to employ the above named coop student-learner; to provide on-the-job training as set out herein and the schedule of processes attached to and made a part of this training agreement, for the expressed purpose of his or her learning the manipulative skills and acquiring experience in the occupation of ______________________________

3. The student-learner is to be given the opportunity to progress through the various phases of the occupation under direct and close supervision of a qualified and experienced person.

4. The training agency agrees not to discharge any regular employee because of additional services that might be rendered by the student-learner while in training.

5. The student-learner shall conform to and be subject to all rules and regulations adopted from time to time by the training agency for its regular employees, unless such rules and regulations are contrary to the terms of this memorandum.

6. The parents of the student-learner will not be relieved from any responsibility with regard to the personal conduct of the student while in training.

7. The training may be discontinued at any time by any person singing this memorandum, but each agrees to notify the other parties in advance.

8. Safety instruction shall be given by the school and correlated by the employer with on-the-job training.

9. A schedule of organized and progressive work processes to be performed on the job and the related technical instruction, including occupational safety and hygiene, to be taught in the school based on an analysis of the occupation, shall be prepared as each student-learner's course of study and be made a part of this Training Memorandum.

10. This Training Memorandum is to be prepared in quintuplicate and signed by each party for whom a place is provided. After securing signatures this entire slip-sheet set with at least two (2) copies of the Schedule of Processes attached, is to be forwarded to the Regional Supervisor of Trade and Industrial Education. If in order, he will keep the State office copy, forward a copy to the State Department of Labor and return the others to the Coordinator for distribution, as designated with their Schedule of Processes attached.

11. The legal employment (hours at work) of each student-learner will consist of as many or more hours per week, throughout the school year, as he spends in school:
    a. In no case will the employment be less than fifteen (15) hours per week, the major portion of which will be during school hours;
    b. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days; and
    c. In all cases a monetary wage shall be paid each student-learner, at a rate commensurate with wages paid other employees doing similar work.

12. Two units toward high school graduation may be allowed for the combined related study and work experience when carried on successfully for a school year. Nothing less than a school year will be recognized for credit.

13. The work of the student-learner in an occupation which has been declared hazardous, as provided by sub-sections (e), (g), and (i) (of amended Section 50-712 of Tennessee Code Annotated and the U. S. Secretary of Labor, Hazardous Occupations Orders Nos. 5, 8, and 12), shall be incidental to his training, shall be intermittent and for short periods of time.

14. In order to secure the maximum effectiveness from the related study the local school authorities have employed a coordinator who will make visits to the place of employment, in order to correlate school instruction with the on-the-job experience.

PLACEMENT INFORMATION

CHECK THOSE THAT APPLY: Male________; Female________; White________; Negro________; Junior________; Senior________; Post Graduate________

Student-Learner's Home Address______________________ Telephone______________ Social Security Number______________

Date of Birth______________19____ Age Last Birthday______ Date Entered Co-Op Program ______________19____

Training Agency______________________ Address______________________

Telephone__________ Contact Official______________ Date of Placement at this Agency______________19____

Length of training period ________ year(s). Lenght of probationary period________ weeks.

Has exemption for less than minimum wage been applied for? Yes____ No____ From ______________19____ to ______________19____

Compensation: First Year: 1st________Hours________Cents per Hour. Second Year: 1st________Hours________Cents per Hour.

CLASSROOM SCHEDULE						EMPLOYMENT SCHEDULE			
NO.	PERIOD TIME	INSTRUCTOR	SUBJECT	HRS. RELATED	HRS. OTHER	DAY	TIME ON DUTY	TIME OFF DUTY	NO. HOURS
0						Mon.			
1						Tues.			
2						Wed.			
3						Thurs.			
4						Fri.			
5						Sat.			
6						Sun.			
			DAILY TOTALS					WEEKLY TOTAL	

We, the undersigned, agree to follow this plan of training as outlined for the above named S.L. and the Schedule of Processes attached hereto and made a part of this training program:

For Training Agency______________________ Student-Learner______________________

Parent or Guardian______________________ I.C.T. Coordinator______________________

Principal of School______________________ Approved by______________________for State Director

Trade and Industrial Education, Date______________,19____ Mailed To Dept. of Labor______________, 19____.

THIS TRAINING MEMORANDUM IS NOT COMPLETE WITHOUT SCHEDULE OF PROCESSES ATTACHED

Conducted in Cooperation with the Tennessee State Department of Education, Division of Vocational Education, Trade and Industrial Service, Nashville.

STATE T & I COPY

Coordinator______________
City______________
Training Agency______________
School______________
Occupation______________
Year______________
Code: T&I______________
Student-Learner______________
Non T&I______________

TENNESSEE VOCATIONAL INDUSTRIAL PART-TIME CO-OPERATIVE TRAINING PROGRAM —MINIMUM STANDARDS*—

OF

THE TENNESSEE STATE PLAN FOR VOCATIONAL EDUCATION AND THE RULES AND REGULATIONS

Vocational trade, industrial, and technical training is an elective in all schools of the State except the large vocational and/or technical high schools. It has as one of its purposes:

To provide instruction of a preparatory type in the development of basic manipulative skills, laboratory practice, safety, judgement, technical knowledge, and related industrial information for the purpose of fitting persons for useful employment in trade, technical, or industrial occupations.

This part-time industrial coop training is one type of program designed to carry out this purpose.

In the coop program the student-learners usually spend the mornings in school. During the afternoon they are employed in cooperating industries in the community for the express purpose of learning the manipulative skills and to gain on-the-job experiences in their chosen vocation.

Only juniors and seniors, students at least sixteen (16) years of age, may be considered eligible for enrollment in an industrial coop program.

All or a part of the senior year of a technician type program may be pursued on a cooperative basis which meets the basic standards outlined herein.

The program should be organized and conducted with the advice and counsel of an advisory committee consisting of representatives of employers and employees of the community.

A written training agreement (training memorandum), on approved forms shall be drawn up for each student-learner, which sets forth the skills and experiences to be acquired on the job and the related technical instruction to be taught in the school in a schedule of processes; the monetary wage to be paid; the specific training time schedule, including daily hours of employment and in school; that the employment is incidental to his training, is to be intermittent and for short periods of time; that he is to be under the direct and close supervision of a qualified and experienced person; that safety instruction shall be given by the school and correlated by the employer with on-the-job training; and any other special provisions applicable to the specific student-learner's training program.

The agreement shall be made in quadruplicate or quintuplicate, signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State Director of Trade and Industrial Education or his representative (a District Supervisor). One copy of the complete agreement shall be kept on file by the school, one by the employer, one by the State Director and in cases where the employment is in a hazardous occupation, one copy is to be forwarded to the State Department of Labor.

During the time of employment in the on-the-job phase of the program, the student-learner:

Shall be legally employed in an approved trade or industrial occupation which offers real opportunities for training, employment, and advancement for the student-learner, and which is socially respectable in the community.

Shall be employed at a monetary wage at a rate commensurate with wages paid other employees doing similar work.

The legal employment (hours at work) of each student-learner shall consist of as many or more hours per week, throughout the school year, as he spends in school.

In no case will the employment be less than fifteen (15) hours per week, the major portion of which, three (3) hours daily, shall be during normal day school hours. This precludes a student attending school full-time and meeting the requirements for employment outside the normal day school hours.

In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Provision shall be made for adequate coordination and supervision of the program and sufficient time must be provided for a coordinator to visit employers and student-learners on the job.

During the half-day in school, the Industrial Cooperative Programs are to be organized to provide each student-learner with:

Plan A. Two years of training with one regular class period per day of related vocational instruction, pertaining to his occupation, in classes limited to this group and taught by the coordinator; or

Plan B. One year of training with two regular class periods per day (minimum of 1½ clock hours) of related vocational instruction in classes limited to the group and taught by the coordinator; and

Two regular subjects (usually required) toward graduation.

Note 1. Industrial Cooperative Programs enrolling only student-learners in approved trade, industrial, or technical occupations, under Plan A or B above, and whose coordinator devotes his full-time to the Cooperative program, may be considered a 100% vocational trade and industrial education program and reimbursed as such.

Note 2. Cooperative programs enrolling at least fifty (50) per cent of the student-learners in approved trade, industrial or technical occupations and the remainder in other types of occupations having a recognized learning period of at least one (1) year;

Conducts separate related vocational instruction classes for the two groups; the coordinator devotes his entire time to the cooperative programs; meet all other requirements of an industrial cooperative program, may be considered a part-time vocational trade and industrial education program and reimbursed as such.

Note 3. Industrial Cooperative programs enrolling only student-learners as in Note 1, but an insufficient number to warrant the full-time of a coordinator may be considered a part-time vocational trade and industrial education program and reimbursed as such. The coordinator must be free to carry on his coordination duties during at least the last two class periods of the school day.

Two units of high school credit per year may be granted for the combination (on-the-job training in employment and the related vocational instruction in the school) phases of industrial coop training. Two, three, or four units may be presented for graduation.

A qualified teacher-coordinator shall head up the program. (See "Tennessee Regulations for Certification of Teachers.")

PART-TIME COOPERATIVE TRAINING PROGRAMS

Non-reimbursed part-time cooperative training programs shall operate under the rules and regulations governing the operation of reimbursed part-time cooperative training programs.

THE TENNESSEE STATE DEPARTMENT OF LABOR

PROHIBITED OCCUPATIONS FOR CHILDREN UNDER EIGHTEEN

50-712. Prohibited occupations for children under eighteen. No minor under eighteen (18) years of age shall be employed, permitted or suffered to work:

(a) In setting up, adjusting, oiling, or cleaning machinery; in proximity to any unguarded belts, machinery or gearing;

(b) In or about any mine or quarry;

(c) As a brakeman, engineer, fireman, conductor or motorman upon any railroad or railway, or in the operation of any railway or railroad car or as a yardman or in switch tending, gate tending, or in connection with track construction or repair, or as a railroad telegraph operator;

(d) In or about any plant manufacturing explosives or articles containing explosive components, or in the use or transportation of same;

(e) In or about plants manufacturing iron or steel, ore reduction works, smelters, foundries, forging shops, hot rolling mills, or in any place in which the heating, melting or heat treatment of metals is carried on;

(f) Logging operations, or in or about sawmills or cooperate stock mills;

(g) In operating or assisting to operate any power-driven woodworking machine or tool, laundry machinery, dough brakes, grinding machinery, power punches or shears, wire or iron straightening or drawing machines, machinery used in the cold rolling of heavy metal stock;

(h) As a driver of any motor vehicle;

(i) In the operation of any elevator, crane or hoist;

(j) In spray painting, or in occupations involving exposure to lead or its compounds or to dangerous or poisonous dyes or chemicals;

(k) In occupations involving exposure to radio-active substances;

(l) In any place or establishment in which intoxicating alcoholic liquors are served or sold for consumption on the premises or in which such liquors are manufactured or bottled;

(m) In any poolroom;

Except sub-sections (e), (g) and (j) shall not apply to a student-learner between sixteen (16) and eighteen (18) years of age, enrolled in a course of study and training in a cooperative vocational training program under a recognized State or local public educational authority; provided further, that such student-learner be employed under a written agreement on forms furnished and approved by the Commissioner of Labor which shall provide that the work of the student-learner in the occupations therein declared hazardous, as provided by sub-sections (e), (g) and (j) shall be incidental to his training, shall be intermittent and for short periods of time, and shall be under the direct and close supervision of a qualified and experienced person; that safety instructions shall be given by the school and correlated by the employer with on-the-job training; and that a schedule of organized and progressive work processes to be performed on the job shall have been prepared. Such a written agreement shall carry the name of the student-learner, and shall be signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State supervisor of trade and industrial education or his representative. Copies of the agreement shall be in quadruplicate, one copy to be kept on file by the school, one by the employer, one by the State supervisor, and one copy forwarded to the Department of Labor. This exemption for the employment of a student-learner may be revoked in any individual situation wherein it is found that reasonable precautions have not been observed for the safety of the student-learner, or that the employer of such student-learner has not complied with other provisions relating to the employment of minors as set out by Sections 50-701 through 50-717 of Tennessee Code Annotated. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Inquiries regarding this program should be addressed to the State Director, Trade and Industrial Education, Division of Vocational Education, 118 Cordell Hull Building, Nashville, Tennessee.

REMARKS

---

*This material is quoted from the following official documents, State Department of Education, Cordell Hull Building, Nashville 3, Tennessee:

(a) The Tennessee State Plan For Vocational Education, Section V, Trade and Industrial Education, Tennessee State Board For Vocational Education, June, 1959.

(b) Rules, Regulations and Minimum Standards, Tennessee State Board of Education, July, 1959.

Footnote: These exemptions apply only to student-learners engaged in a bona fide cooperative training program conducted by a public school meeting the standards of the Tennessee State Plan for Vocational Education and the Rules and Regulations of the State Board of Education.

T & I FORM ICT-TM
6/61—5M

TENNESSEE INDUSTRIAL CO-OPERATIVE TRAINING
TRAINING MEMORANDUM

1. This Industrial Cooperative Program is organized to provide ______________________ the student-learner with: (Check the Plan applying)

   Plan A. __________ Two years of training with one regular class period per day of related vocational instruction in classes limited to industrial cooperative student-learners; or

   Plan B. __________ One year of training with two regular class periods (minimum 1½ clock hours) per day of related vocational instruction in classes limited to the group.

2. The training agency agrees to employ the above named coop student-learner; to provide on-the-job training as set out herein and the schedule of processes attached to and made a part of this training agreement, for the expressed purpose of his or her learning the manipulative skills and acquiring experience in the occupation of ______________________

3. The student-learner is to be given the opportunity to progress through the various phases of the occupation under direct and close supervision of a qualified and experienced person.

4. The training agency agrees not to discharge any regular employee because of additional services that might be rendered by the student-learner while in training.

5. The student-learner shall conform to and be subject to all rules and regulations adopted from time to time by the training agency for its regular employees, unless such rules and regulations are contrary to the terms of this memorandum.

6. The parents of the student-learner will not be relieved from any responsibility with regard to the personal conduct of the student while in training.

7. The training may be discontinued at any time by any person singing this memorandum, but each agrees to notify the other parties in advance.

8. Safety instruction shall be given by the school and correlated by the employer with on-the-job training.

9. A schedule of organized and progressive work processes to be performed on the job and the related technical instruction, including occupational safety and hygiene, to be taught in the school based on an analysis of the occupation, shall be prepared as each student-learner's course of study and be made a part of this Training Memorandum.

10. This Training Memorandum is to be prepared in quintuplicate and signed by each party for whom a place is provided. After securing signatures this entire slip-sheet set with at least two (2) copies of the Schedule of Processes attached, is to be forwarded to the Regional Supervisor of Trade and Industrial Education. If in order, he will keep the State office copy, forward a copy to the State Department of Labor and return the others to the Coordinator for distribution, as designated with their Schedule of Processes attached.

11. The legal employment (hours at work) of each student-learner will consist of as many or more hours per week, throughout the school year, as he spends in school:
    a. In no case will the employment be less than fifteen (15) hours per week, the major portion of which will be during school hours;
    b. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days; and
    c. In all cases a monetary wage shall be paid each student-learner, at a rate commensurate with wages paid other employees doing similar work.

12. Two units toward high school graduation may be allowed for the combined related study and work experience when carried on successfully for a school year. Nothing less than a school year will be recognized for credit.

13. The work of the student-learner in an occupation which has been declared hazardous, as provided by sub-sections (e), (g), and (i) (of amended Section 50-712 of Tennessee Code Annotated and the U. S. Secretary of Labor, Hazardous Occupations Orders Nos. 5, 8, and 12), shall be incidental to his training, shall be intermittent and for short periods of time.

14. In order to secure the maximum effectiveness from the related study the local school authorities have employed a coordinator who will make visits to the place of employment, in order to correlate school instruction with the on-the-job experience.

PLACEMENT INFORMATION

CHECK THOSE THAT APPLY: Male________; Female________; White________; Negro________; Junior________; Senior________; Post Graduate________

Student-Learner's Home Address______________________ Telephone__________ Social Security Number__________

Date of Birth______________19_____ Age Last Birthday______ Date Entered Co-Op Program ______________19_____

Training Agency______________________ Address______________________

Telephone__________ Contact Official______________ Date of Placement at this Agency______________19_____

Length of training period __________ year(s). Lenght of probationary period__________ weeks.

Has exemption for less than minimum wage been applied for? Yes____ No____ From ______________19_____ to ______________19_____

Compensation: First Year: 1st__________Hours__________Cents per Hour. Second Year: 1st__________Hours__________Cents per Hour.

CLASSROOM SCHEDULE						EMPLOYMENT SCHEDULE			
NO.	PERIOD TIME	INSTRUCTOR	SUBJECT	HRS. RELATED	HRS. OTHER	DAY	TIME ON DUTY	TIME OFF DUTY	NO. HOURS
0						Mon.			
1						Tues.			
2						Wed.			
3						Thurs.			
4						Fri.			
5						Sat.			
6						Sun.			
			DAILY TOTALS					WEEKLY TOTAL	

We, the undersigned, agree to follow this plan of training as outlined for the above named S.L. and the Schedule of Processes attached hereto and made a part of this training program:

For Training Agency______________________ Student-Learner______________________

Parent or Guardian______________________ I.C.T. Coordinator______________________

Principal of School______________________ Approved by______________________for State Director

Trade and Industrial Education, Date______________,19_____. Mailed To Dept. of Labor______________, 19_____.

THIS TRAINING MEMORANDUM IS NOT COMPLETE WITHOUT SCHEDULE OF PROCESSES ATTACHED

Conducted in Cooperation with the Tennessee State Department of Education, Division of Vocational Education, Trade and Industrial Service, Nashville.

STATE DEPARTMENT LABOR COPY

Coordinator__________ City__________

Training Agency__________ School__________

Occupation__________ Year__________

Code: T&I__________ Student-Learner__________ Non T&I

TENNESSEE VOCATIONAL INDUSTRIAL PART-TIME CO-OPERATIVE TRAINING PROGRAM
—MINIMUM STANDARDS*—

OF

THE TENNESSEE STATE PLAN FOR VOCATIONAL EDUCATION AND THE RULES AND REGULATIONS

Vocational trade, industrial, and technical training is an elective in all schools of the State except the large vocational and/or technical high schools. It has as one of its purposes:

To provide instruction of a preparatory type in the development of basic manipulative skills, laboratory practice, safety, judgement, technical knowledge, and related industrial information for the purpose of fitting persons for useful employment in trade, technical, or industrial occupations.

This part-time industrial coop training is one type of program designed to carry out this purpose.

In the coop program the student-learners usually spend the mornings in school. During the afternoon they are employed in cooperating industries in the community for the express purpose of learning the manipulative skills and to gain on-the-job experiences in their chosen vocation.

Only juniors and seniors, students at least sixteen (16) years of age, may be considered eligible for enrollment in an industrial coop program.

All or a part of the senior year of a technician type program may be pursued on a cooperative basis which meets the basic standards outlined herein.

The program should be organized and conducted with the advice and counsel of an advisory committee consisting of representatives of employers and employees of the community.

A written training agreement (training memorandum), on approved forms shall be drawn up for each student-learner, which sets forth the skills and experiences to be acquired on the job and the related technical instruction to be taught in the school in a schedule of processes; the monetary wage to be paid; the specific training time schedule, including daily hours of employment and in school; that the employment is incidental to his training, is to be intermittent and for short periods of time; that he is to be under the direct and close supervision of a qualified and experienced person; that safety instruction shall be given by the school and correlated by the employer with on-the-job training; and any other special provisions applicable to the specific student-learner's training program.

The agreement shall be made in quadruplicate or quintuplicate, signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State Director of Trade and Industrial Education or his representative (a District Supervisor). One copy of the complete agreement shall be kept on file by the school, one by the employer, one by the State Director and in cases where the employment is in a hazardous occupation, one copy is to be forwarded to the State Department of Labor.

During the time of employment in the on-the-job phase of the program, the student-learner:

Shall be legally employed in an approved trade or industrial occupation which offers real opportunities for training, employment, and advancement for the student-learner, and which is socially respectable in the community.

Shall be employed at a monetary wage at a rate commensurate with wages paid other employees doing similar work.

The legal employment (hours at work) of each student-learner shall consist of as many or more hours per week, throughout the school year, as he spends in school.

In no case will the employment be less than fifteen (15) hours per week, the major portion of which, three (3) hours daily, shall be during normal day school hours. This precludes a student attending school full-time and meeting the requirements for employment outside the normal day school hours.

In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Provision shall be made for adequate coordination and supervision of the program and sufficient time must be provided for a coordinator to visit employers and student-learners on the job.

During the half-day in school, the Industrial Cooperative Programs are to be organized to provide each student-learner with:

Plan A. Two years of training with one regular class period per day of related vocational instruction, pertaining to his occupation, in classes limited to this group and taught by the coordinator; or

Plan B. One year of training with two regular class periods per day (minimum of 1½ clock hours) of related vocational instruction in classes limited to the group and taught by the coordinator; and

Two regular subjects (usually required) toward graduation.

Note 1. Industrial Cooperative Programs enrolling only student-learners in approved trade, industrial, or technical occupations, under Plan A or B above, and whose coordinator devotes his full-time to the Cooperative program, may be considered a 100% vocational trade and industrial education program and reimbursed as such.

Note 2. Cooperative programs enrolling at least fifty (50) per cent of the student-learners in approved trade, industrial or technical occupations and the remainder in other types of occupations having a recognized learning period of at least one (1) year; Conducts separate related vocational instruction classes for the two groups; the coordinator devotes his entire time to the cooperative programs; meet all other requirements of an industrial cooperative program, may be considered a part-time vocational trade and industrial education program and reimbursed as such.

Note 3. Industrial Cooperative programs enrolling only student-learners as in Note 1, but an insufficient number to warrant the full-time of a coordinator may be considered a part-time vocational trade and industrial education program and reimbursed as such. The coordinator must be free to carry on his coordination duties during at least the last two class periods of the school day.

Two units of high school credit per year may be granted for the combination (on-the-job training in employment and the related vocational instruction in the school) phases of industrial coop training. Two, three, or four units may be presented for graduation.

A qualified teacher-coordinator shall head up the program. (See "Tennessee Regulations for Certification of Teachers.")

PART-TIME COOPERATIVE TRAINING PROGRAMS

Non-reimbursed part-time cooperative training programs shall operate under the rules and regulations governing the operation of reimbursed part-time cooperative training programs.

THE TENNESSEE STATE DEPARTMENT OF LABOR PROHIBITED OCCUPATIONS FOR CHILDREN UNDER EIGHTEEN

50-712. Prohibited occupations for children under eighteen. No minor under eighteen (18) years of age shall be employed, permitted or suffered to work:

(a) In setting up, adjusting, oiling, or cleaning machinery; in proximity to any unguarded belts, machinery or gearing;

(b) In or about any mine or quarry;

(c) As a brakeman, engineer, fireman, conductor or motorman upon any railroad or railway, or in the operation of any railway or railroad car or as a yardman or in switch tending, gate tending, or in connection with track construction or repair, or as a railroad telegraph operator;

(d) In or about any plant manufacturing explosives or articles containing explosive components, or in the use or transportation of same;

(e) In or about plants manufacturing iron or steel, ore reduction works, smelters, foundries, forging shops, hot rolling mills, or in any place in which the heating, melting or heat treatment of metals is carried on;

(f) Logging operations, or in or about sawmills or cooperate stock mills;

(g) In operating or assisting to operate any power-driven woodworking machine or tool, laundry machinery, dough brakes, grinding machinery, power punches or shears, wire or iron straightening or drawing machines, machinery used in the cold rolling of heavy metal stock;

(h) As a driver of any motor vehicle;

(i) In the operation of any elevator, crane or hoist;

(j) In spray painting, or in occupations involving exposure to lead or its compounds or to dangerous or poisonous dyes or chemicals;

(k) In occupations involving exposure to radio-active substances;

(l) In any place or establishment in which intoxicating alcoholic liquors are served or sold for consumption on the premises or in which such liquers are manufactured or bottled;

(m) In any poolroom;

Except sub-sections (e), (g) and (j) shall not apply to a student-learner between sixteen (16) and eighteen (18) years of age, enrolled in a course of study and training in a cooperative vocational training program under a recognized State or local public educational authority; provided further, that such student-learner be employed under a written agreement on forms furnished and approved by the Commissioner of Labor which shall provide that the work of the student-learner in the occupations therein declared hazardous, as provided by sub-sections (e), (g) and (j) shall be incidental to his training, shall be intermittent and for short periods of time, and shall be under the direct and close supervision of a qualified and experienced person; that safety instructions shall be given by the school and correlated by the employer with on-the-job training; and that a schedule of organized and progressive work processes to be performed on the job shall have been prepared. Such a written agreement shall carry the name of the student-learner, and shall be signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State supervisor of trade and industrial education or his representative. Copies of the agreement shall be in quadruplicate, one copy to be kept on file by the school, one by the employer, one by the State supervisor, and one copy forwarded to the Department of Labor. This exemption for the employment of a student-learner may be revoked in any individual situation wherein it is found that reasonable precautions have not been observed for the safety of the student-learner, or that the employer of such student-learner has not complied with other provisions relating to the employment of minors as set out by Sections 50-701 through 50-717 of Tennessee Code Annotated. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Footnote: These exemptions apply only to student-learners engaged in a bona fide cooperative training program conducted by a public school meeting the standards of the Tennessee State Plan for Vocational Education and the Rules and Regulations of the State Board of Education.

Inquiries regarding this program should be addressed to the State Director, Trade and Industrial Education, Division of Vocational Education, 116 Cordell Hull Building, Nashville, Tennessee.

---

*This material is quoted from the following official documents, State Department of Education, Cordell Hull Building, Nashville 3, Tennessee:

(a) The Tennessee State Plan For Vocational Education, Section V, Trade and Industrial Education, Tennessee State Board For Vocational Education, June, 1959.

(b) Rules, Regulations and Minimum Standards, Tennessee State Board of Education, July, 1959.

REMARKS

T & I FORM ICT-TM
6/61—5M

TENNESSEE INDUSTRIAL CO-OPERATIVE TRAINING
TRAINING MEMORANDUM

1. This Industrial Cooperative Program is organized to provide ______________________________, the student-learner with:
(Check the Plan applying)

    Plan A. __________ Two years of training with one regular class period per day of related vocational instruction in classes limited to industrial co-operative student-learners; or

    Plan B. __________ One year of training with two regular class periods (minimum 1½ clock hours) per day of related vocational instruction in classes limited to the group.

2. The training agency agrees to employ the above named coup student-learner; to provide on-the-job training as set out herein and the schedule of processes attached to and made a part of this training agreement, for the expressed purpose of his or her learning the manipulative skills and acquiring experience in the occupation of ______________________________

3. The student-learner is to be given the opportunity to progress through the various phases of the occupation under direct and close supervision of a qualified and experienced person.

4. The training agency agrees not to discharge any regular employee because of additional services that might be rendered by the student-learner while in training.

5. The student-learner shall conform to and be subject to all rules and regulations adopted from time to time by the training agency for its regular employees, unless such rules and regulations are contrary to the terms of this memorandum.

6. The parents of the student-learner will not be relieved from any responsibility with regard to the personal conduct of the student while in training.

7. The training may be discontinued at any time by any person singing this memorandum, but each agrees to notify the other parties in advance.

8. Safety instruction shall be given by the school and correlated by the employer with on-the-job training.

9. A schedule of organised and progressive work processes to be performed on the job and the related technical instruction, including occupational safety and hygiene, to be taught in the school based on an analysis of the occupation, shall be prepared as each student-learner's course of study and be made a part of this Training Memorandum.

10. This Training Memorandum is to be prepared in quintuplicate and signed by each party for whom a place is provided. After securing signatures this entire slip-sheet set with at least two (2) copies of the Schedule of Processes attached, is to be forwarded to the Regional Supervisor of Trade and Industrial Education. If in order, he will keep the State office copy, forward a copy to the State Department of Labor and return the others to the Coordinator for distribution, as designated with their Schedule of Processes attached.

11. The legal employment (hours at work) of each student-learner will consist of as many or more hours per week, throughout the school year, as he spends in school:
    a. In no case will the employment be less than fifteen (15) hours per week, the major portion of which will be during school hours;
    b. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days; and
    c. In all cases a monetary wage shall be paid each student-learner, at a rate commensurate with wages paid other employees doing similar work.

12. Two units toward high school graduation may be allowed for the combined related study and work experience when carried on successfully for a school year. Nothing less than a school year will be recognized for credit.

13. The work of the student-learner in an occupation which has been declared hazardous, as provided by sub-sections (e), (g), and (i) (of amended Section 50-712 of Tennessee Code Annotated and the U. S. Secretary of Labor, Hazardous Occupations Orders Nos. 5, 8, and 12), shall be incidental to his training, shall be intermittent and for short periods of time.

14. In order to secure the maximum effectiveness from the related study the local school authorities have employed a coordinator who will make visits to the place of employment, in order to correlate school instruction with the on-the-job experience.

PLACEMENT INFORMATION

CHECK THOSE THAT APPLY: Male______; Female______; White______; Negro______; Junior______; Senior______; Post Graduate______

Student-Learner's Home Address______________ Telephone______________ Social Security Number______________

Date of Birth______________19____ Age Last Birthday______ Date Entered Co-Op Program ______________19____

Training Agency______________ Address______________

Telephone______________ Contact Official______________ Date of Placement at this Agency______________19____

Length of training period ________ year(s). Lenght of probationary period________ weeks.

Has exemption for less than minimum wage been applied for? Yes____ No____ From ______________19____ to ______________19____

Compensation: First Year: 1st________Hours________Cents per Hour. Second Year: 1st________Hours________Cents per Hour.

CLASSROOM SCHEDULE						EMPLOYMENT SCHEDULE			
NO.	PERIOD TIME	INSTRUCTOR	SUBJECT	HRS. RELATED	HRS. OTHER	DAY	TIME ON DUTY	TIME OFF DUTY	NO. HOURS
0						Mon.			
1						Tues.			
2						Wed.			
3						Thurs.			
4						Fri.			
5						Sat.			
6						Sun.			
			DAILY TOTALS					WEEKLY TOTAL	

We, the undersigned, agree to follow this plan of training as outlined for the above named S.L. and the Schedule of Processes attached hereto and made a part of this training program:

For Training Agency______________ Student-Learner______________

Parent or Guardian______________ I.C.T. Coordinator______________

Principal of School______________ Approved by ______________for State Director

Trade and Industrial Education, Date______________,19____. Mailed To Dept. of Labor______________, 19____.

THIS TRAINING MEMORANDUM IS NOT COMPLETE WITHOUT SCHEDULE OF PROCESSES ATTACHED

Conducted in Cooperation with the Tennessee State Department of Education, Division of Vocational Education, Trade and Industrial Service, Nashville.

SCHOOL COPY

Coordinator______ City______
Training Agency______ School______
Occupation______
Year______ Code: T&I______ Non T&I______ Student-Learner______

TENNESSEE VOCATIONAL INDUSTRIAL PART-TIME CO-OPERATIVE TRAINING PROGRAM —MINIMUM STANDARDS*—

OF

THE TENNESSEE STATE PLAN FOR VOCATIONAL EDUCATION AND THE RULES AND REGULATIONS

Vocational trade, industrial, and technical training is an elective in all schools of the State except the large vocational and/or technical high schools. It has as one of its purposes:

To provide instruction of a preparatory type in the development of basic manipulative skills, laboratory practice, safety judgement, technical knowledge, and related industrial information for the purpose of fitting persons for useful employment in trade, technical, or industrial occupations.

This part-time industrial coop training is one type of program designed to carry out this purpose.

In the coop program the student-learners usually spend the mornings in school. During the afternoon they are employed in cooperating industries in the community for the express purpose of learning the manipulative skills and to gain on-the-job experiences in their chosen vocation.

Only juniors and seniors, students at least sixteen (16) years of age, may be considered eligible for enrollment in an industrial coop program.

All or a part of the senior year of a technician type program may be pursued on a cooperative basis which meets the basic standards outlined herein.

The program should be organized and conducted with the advice and counsel of an advisory committee consisting of representatives of employers and employees of the community.

A written training agreement (training memorandum), on approved forms shall be drawn up for each student-learner, which sets forth the skills and experiences to be acquired on the job and the related technical instruction to be taught in the school in a schedule of processes; the monetary wage to be paid; the specific training time schedule, including daily hours of employment and in school; that the employment is incidental to his training, is to be intermittent and for short periods of time; that he is to be under the direct and close supervision of a qualified and experienced person; that safety instruction shall be given by the school and correlated by the employer with on-the-job training; and any other special provisions applicable to the specific student-learner's training program.

The agreement shall be made in quadruplicate or quintuplicate, signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State Director of Trade and Industrial Education or his representative (a District Supervisor). One copy of the complete agreement shall be kept on file by the school, one by the employer, one by the State Director and in cases where the employment is in a hazardous occupation, one copy is to be forwarded to the State Department of Labor.

During the time of employment in the on-the-job phase of the program, the student-learner:

Shall be legally employed in an approved trade or industrial occupation which offers real opportunities for training, employment, and advancement for the student-learner, and which is socially respectable in the community.

Shall be employed at a monetary wage at a rate commensurate with wages paid other employees doing similar work.

The legal employment (hours at work) of each student-learner shall consist of as many or more hours per week, throughout the school year, as he spends in school.

In no case will the employment be less than fifteen (15) hours per week, the major portion of which, three (3) hours daily shall be during normal day school hours. This precludes a student attending school full-time and meeting the requirements for employment outside the normal day school hours.

In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Provision shall be made for adequate coordination and supervision of the program and sufficient time must be provided for a coordinator to visit employers and student-learners on the job.

During the half-day in school the Industrial Cooperative Programs are to be organized to provide each student-learner with:

Plan A. Two years of training with one regular class period per day of related vocational instruction, pertaining to his occupation, in classes limited to this group and taught by the coordinator; or

Plan B. One year of training with two regular class periods per day (minimum of 1½ clock hours) of related vocational instruction in classes limited to the group and taught by the coordinator; and

Two regular subjects (usually required) toward graduation.

Note 1. Industrial Cooperative Programs enrolling only student-learners in approved trade, industrial, or technical occupations, under Plan A or B above, and whose coordinator devotes his full-time to the Cooperative program, may be considered a 100% vocational trade and industrial education program and reimbursed as such.

Note 2. Cooperative programs enrolling at least fifty (50) per cent of the student-learners in approved trade, industrial or technical occupations and the remainder in other types of occupations having a recognized learning period of at least one (1) year;

Conducts separate related vocational instruction classes for the two groups; the coordinator devotes his entire time to the cooperative programs; meet all other requirements of an industrial cooperative program, may be considered a part-time vocational trade and industrial education program and reimbursed as such.

Note 3. Industrial Cooperative programs enrolling only student-learners as in Note 1, but an insufficient number to warrant the full time of a coordinator may be considered a part-time vocational trade and industrial education program and reimbursed as such. The coordinator must be free to carry on his coordination duties during at least the last two class periods of the school day.

Two units of high school credit per year may be granted for the combination (on-the-job training in employment and the related vocational instruction in the school) phases of industrial coop training. Two, three, or four units may be presented for graduation.

A qualified teacher-coordinator shall head up the program. (See "Tennessee Regulations for Certification of Teachers.")

PART-TIME COOPERATIVE TRAINING PROGRAMS

Non-reimbursed part-time cooperative training programs shall operate under the rules and regulations governing the operation of reimbursed part-time cooperative training programs.

THE TENNESSEE STATE DEPARTMENT OF LABOR

PROHIBITED OCCUPATIONS FOR CHILDREN

UNDER EIGHTEEN

50-712. Prohibited occupations for children under eighteen. No minor under eighteen (18) years of age shall be employed, permitted or suffered to work:

(a) In setting up, adjusting, oiling, or cleaning machinery; in proximity to any unguarded belts, machinery or gearing;

(b) In or about any mine or quarry;

(c) As a brakeman, engineer, fireman, conductor or motorman upon any railroad or railway, or in the operation of any railway or railroad car or as a yardman or in switch tending, gate tending, or in connection with track construction or repair, or as a railroad telegraph operator

(d) In or about any plant manufacturing explosives or articles containing explosive components, or in the use or transportation of same;

(e) In or about plants manufacturing iron or steel, ore reduction works, smelters, foundries, forging shops, hot rolling mills, or in any place in which the heating, melting or heat treatment of metals is carried on;

(f) Logging operations, or in or about sawmills or cooperage stock mills;

(g) In operating or assisting to operate any power-driven woodworking machine or tool, laundry machinery, dough brakes, grinding machinery, power punches or shears, wire or iron straightening or drawing machines, machinery used in the cold rolling of heavy metal stock;

(h) As a driver of any motor vehicle;

(i) In the operation of any elevator, crane or hoist;

(j) In spray painting, or in occupations involving exposure to lead or its compounds or to dangerous or poisonous dyes or chemicals;

(k) In occupations involving exposure to radio-active substances;

(l) In any place or establishment in which intoxicating alcoholic liquors are served or sold for consumption on the premises or in which such liquors are manufactured or bottled;

(m) In any poolroom;

Except sub-sections (e), (g) and (j) shall not apply to a student-learner between sixteen (16) and eighteen (18) years of age, enrolled in a course of study and training in a cooperative vocational training program under a recognized State or local public educational authority; provided further, that such student-learner be employed under a written agreement on forms furnished and approved by the Commissioner of Labor which shall provide that the work of the student-learner in the occupations therein declared hazardous, as provided by sub-sections (e), (g) and (j) shall be incidental to his training, shall be intermittent and for short periods of time, and shall be under the direct and close supervision of a qualified and experienced person; that safety instructions shall be given by the school and correlated by the employer with on-the-job training; and that a schedule of organized and progressive work processes to be performed on the job shall have been prepared. Such a written agreement shall carry the name of the student-learner, and shall be signed by the employer, the student-learner and his parents or guardian, the school coordinator, and the State supervisor of trade and industrial education or his representative. Copies of the agreement shall be in quadruplicate, one copy to be kept on file by the school, one by the employer, one by the State supervisor, and one copy forwarded to the Department of Labor. This exemption for the employment of a student-learner may be revoked in any individual situation wherein it is found that reasonable precautions have not been observed for the safety of the student-learner, or that the employer of such student-learner has not complied with other provisions relating to the employment of minors as set out by Sections 50-701 through 50-717 of Tennessee Code Annotated. In no instance shall a student-learner spend more than forty-eight (48) hours in school, combined with on-the-job training and work, in any six days out of seven consecutive days.

Footnote: These exemptions apply only to student-learners engaged in a bona fide cooperative training program conducted by a public school meeting the standards of the Tennessee State Plan for Vocational Education and the Rules and Regulations of the State Board of Education.

Inquiries regarding this program should be addressed to the State Director, Trade and Industrial Education, Division of Vocational Education, 116 Cordell Hull Building, Nashville, Tennessee.

REMARKS

---

*This material is quoted from the following official documents, State Department of Education, Cordell Hull Building, Nashville 3, Tennessee:

(a) The Tennessee State Plan For Vocational Education Section V, Trade and Industrial Education, Tennessee State Board For Vocational Education, June, 1959.

(b) Rules, Regulations and Minimum Standards, Tennessee State Board of Education, July, 1959.

SCHEDULE OF PROCESSES

MACHINIST

SKILLS
(To Be Gained on the Job)

A. MEASUREMENT AND LAYOUT
☐

1. Read and interpret working drawings
2. Measure stock with rule
3. Measure stock with slide caliper
4. Measure stock with a gauge
5. Mark length of stock
6. Measure diameters with micrometer depth caliper
7. Measure a depth with a micrometer depth gauge
8. Measure with inside micrometer
9. Measure with vernier caliper
10. Lay off a line using combination square
11. Locate center of round stock with center head
12. Mark off angular lines using protractor head
13. Coat with layout fluid
14. Scribe a line
15. Draw center lines
16. Draw arcs and circles
17. Locate and punch centers for holes
18. Draw bending lines

B. BENCH WORK
☐

1. Lay out stock
2. Saw stock with the hand hacksaw
3. Bend metal
4. Twist metal

KNOWLEDGE
(To Be Acquired at School)

A. MEASUREMENT AND LAYOUT

1. Job prospects, duties, training, earnings, and working conditions in machine shop occupations
2. Blueprints; their use and interpretation
3. Types of rules and calipers, their interpretations and uses
4. Kinds and types of micrometers and their uses
5. The parts and uses of the combination set
6. Kinds and types of layout tools and their uses

B. BENCH WORK

1. Kinds and types of hacksaws and hacksaw blades; their selections and use
2. Kinds of vises and other holding tools used in bench work

5. File flat and curved surfaces
6. Lay out and center punch for drilling
7. Locate center of round stock
8. Cut thread with die
9. Cut internal threads with hand taps
10. Tighten and remove bolts, nuts, and screws
11. Grind cutting edges and points on tools with power grinder
12. Polish and finish metal
13. Cut, shear, and chip metal with cold chisel

3. Kinds and types of files; their selection, care and use
4. Kinds and types of taps and dies
5. Methods of removing broken taps, drills, bolts, and screws
6. Kinds and types of hammers, wrenches and screw drivers; their selection and use
7. Kinds and types of grinding wheels; how they are specified, selected, cared for and used
8. Kinds and types of abrasives used in metal work
9. Kinds and types of common irons and steels
10. Safety practices and procedures when using hand tools

C. GRINDING MACHINES

☐

1. Clean and oil grinding machine
2. Mount grinding wheels on arbor
3. Select feeds and speeds
4. Set up and grind surface with surface grinder
5. Set machine and grind with cylindrical grinder
6. Set up and grind with tool and cutter grinder
7. Set up and grind with internal grinder

C. GRINDING MACHINES

1. Grinding machines, their care and maintenance
2. Kinds and types of grinding machines
3. Grinding speeds, feeds, and lubricants
4. Safety in the operation of the grinding machine
5. Setups and operations with the grinding machine

D. DRILL PRESS

☐

1. Clean and oil the drill press
2. Engage and disengage automatic feeds
3. Set up work for drilling
4. Set depth stops
5. Drill holes
6. Grind a twist drill
7. Select speeds and feeds
8. Ream, countersink and counterbore holes

D. DRILL PRESS

1. Drill presses, their care and maintenance
2. Kinds, types, and adaptations of the drill press
3. Methods of holding work for drilling
4. Safety factors in drill press operation
5. Kinds and types of chucks
6. Kinds and types of twist drills
7. Kinds and types of coolants used
8. Kinds and types of work done on a drill press

E. LATHE

1. Clean and oil the lathe
2. Locate, test, drill, and countersink centers
3. Mount work between centers
4. Set up and cut cylindrical work using steady rest or follower rest
5. Make rough and finish cuts on cylindrical stock
6. True up centers
7. Grind lathe tool bit
8. Face work between centers
9. Turn cylindrical work held between centers
10. Mount and remove face plate, center and chucks
11. Reverse jaws in an independent chuck and change jaws in a universal chuck
12. Mount work in a four-jaw independent chuck
13. Set up and mount work in a spring collet
14. Face and turn work mounted in a chuck
15. Drill in a lathe
16. Cut internal and external threads in lathe
17. Turn a taper by means of the offset method of the taper attachment
18. File and finish work in lathe
19. Bore
20. Mount and machine work on a mandrel
21. Make an angular cut by means of the compound rest
22. Cut stock with the cut-off tool
23. Align lathe centers
24. Knurl stock

E. LATHE

1. Care and maintenance of the lathe
2. Kind and types, attachments and adaptations of lathes
3. Name and function of the parts of the lathe
4. Safety in the operation of the lathe
5. Kinds, types, and shapes of lathe cutting tools
6. Cutting speeds and feeds for various types of materials
7. Kinds, types, and shapes of lathe tool holders
8. Kinds and types of threads and how they may be cut on a lathe
9. Standard tapers and how they are cut on the lathe
10. Standard fits and finishes of machined parts
11. Information to be secured from charts, tables, and handbooks

F. SHAPER

☐

1. Oil and clean the shaper
2. Set up work in vise or on table with angle plate, or hold down clamps
3. Adjust for length and position of stroke
4. Square up stock to rectangular form
5. Adjust for cutting speeds and feeds
6. Grind and bone cutting tools
7. Set depth of cut
8. Make a vertical cut
9. Make a horizontal cut
10. Make an angular cut
11. Make a stopped cut
12. Shape an irregular surface

F. SHAPER

1. Care and maintenance of shaper
2. Kinds and types of shapers
3. Parts of the shaper; their function and adjustment
4. Safety factors in the operation of the shaper
5. Cutting speeds and feeds for various metals
6. Kinds, types, and shapes of cutting tools

G. MILLING MACHINE

☐

1. Set up work in milling machine using vise, hold down clamps or angle plate
2. Clean and oil the milling machine
3. Mount cutters on the arbor
4. Mount and remove arbors and adapters
5. Select feed and speeds
6. Mill a flat face
7. Square up stock
8. Side or face mill stock
9. Mill a chamfer or bevel on rectangular stock
10. Mill squares and hexagons
11. Do straddle milling
12. Mill keyways
13. Mill flutes or grooves
14. Index with the dividing head
15. Mill spirals
16. Grind and whet milling cutters

G. MILLING MACHINE

1. Kinds and types of milling machines and their attachments
2. Name and function of the major parts of the milling machine
3. Safety factors in the use of the milling machine
4. Kinds and types of cutter and holders
5. Milling machine cutting speeds, feeds and lubricants

H. SAFETY

1. Practice company's safety rules on the job
2. Develop safe working habits in use of tools and equipment
3. Keep working area clean
4. Check for Fire Hazards - correct and/or report unsafe conditions
5. Follow safety and operational manuals governing each machine
6. Check machines to see that all safety devices are properly installed
7. Give and/or receive first aid treatment

H. SAFETY

1. Individual safety practices concerning operation and use of each piece of equipment and hand tools
2. Points to check on when inspecting tools and equipment
3. Kind of clothing that should be worn at work
4. First Aid practices
5. Lifting techniques

How to Use the Schedule of Processes

The Schedule of Processes on the preceding pages is a type of job analysis. It is an outline of the skills the student will master by performing them on the job (listed in the left-hand columns), the knowledge the student-learner will acquire through study in the related class (shown in topical form in the right-hand column).

Under each capital letter in the left-hand, or "skills" column, appears a box. The instructor-coordinator will study the Schedule of Processes with the employer and make a check mark in each box corresponding to each skill or unit the employer wishes the student-learner to cover for that year's work. This indicates that the Schedule of Processes can, and perhaps should, be prepared to cover a two-year unit of study and on-the-job experiences.

The skills are not necessarily listed in the order in which they will be encountered on the job. The student-learner in each training situation will be shifted from one phase of the occupation to another in a manner best suited to meet the training needs and the abilities of each individual student-learner. Only those items in the schedule of processes which have been checked are to become the training program of a particular student-learner.

Each day in the related class, the student-learner will report on the work performed the previous day at the training agency. The instructor-coordinator will assist the student-learner in locating in the left-hand column the work performed, and make assignments in the related study from the related topics in the right-hand column.

The Schedule of Processes is a guide to the employer in his routing the student-learner through the various phases of training. It is a medium through which the teacher-coordinator can check the student-learner's progress in learning the parts of the occupation agreed upon prior to training. The coordinator also uses the Schedule of Processes as an aid in making assignments for related study. The student-learner uses the Schedule of Processes as a guide to what will be learned on the job, as a yardstick for preparing assignments, and as a chart for checking progress, both on the job and in the related class.

Additional Forms Which May Be Needed for Student-Learner Placement

When student-learners are placed in training agencies which engage in interstate commerce, there may arise the need of executing additional forms. There are four of these forms. If the training agency desires to employ the student-learner at a wage below the statutory minimum as established under Section 6 of the Fair Labor Standards Act of 1938, as amended, each of these four forms must be completed. These forms are, by number: Form 1-F.1, Form 2-F.1, 4-F.1, and 520-1. These forms are reproduced by number and title on the following pages, along with explanations and where they can be secured.

In addition to the above condition - if a training agency is engaged in interstate commerce, but paying the statutory minimum wage, that training agency may request that Forms 1-F.1, 2-F.1, and 4-F.1 be completed for his files as evidence of the student-learner's age and employment status. Training agencies not engaged in interstate commerce may request the completion of these three forms for the same reason.

Form 1-F.1
Employer's Statement of Intention to Employ

The coordinator should secure this form from his Superintendent, take it to the representative of the training agency and fill in completely all blanks. It is then signed by the representative of the training agency. This form is to be filled out in duplicate. The Superintendent will instruct the coordinator as to the distribution.

Form 2-F.1
Doctor's Certificate of Physical Fitness and Age

This form is on the reverse side of Form 1-F.1; therefore, procurement, number of copies, and distribution is the same as in the preceding paragraph. The student-learner is to take this form, after the reverse side Form 1-F.1 has been completed, to the Physician of his choice and have him complete this form.

(Form 1-F. 1)

EMPLOYER'S STATEMENT
of
INTENTION TO EMPLOY

Place ______________________ **Date** ______________, **19**____

The undersigned employer hereby certifies that he offers employment to ______________________
(Name of Minor)

when an employment certificate or certificate of age has been issued for h____ **and duly signed by the County Superintendent of Schools or his authorized agent. The nature of the occupation in which the minor is to be employed is as follows:** ______________________
(Occupation) (Industry)

For minors to be employed full time:

The hours of employment will be from ______ **A.M. to** ______ **P.M. for** ______ **days a week. Lunch and/or rest period** ______ **minutes.**

For minors to be employed only outside school hours:

The hours of employment will be from ______ **A.M. to** ______ **P.M. for** ______ **school days a week, and/or from** ______ **A.M. to** ______ **P.M. on** ______ **non-school days. Lunch and/or rest period** ______ **minutes.**

The place of employment is located at ______________________

____
(Firm Name)

____
(Signed)

Minors 16 and 17 years of age may not be employed for more than 8 hours a day or 40 hours a week, or for more than 6 days during any 7 consecutive days, or between 10:00 P.M. and 6:00 A.M.

Minors 14 and 15 years of age may not be employed more than 3 hours on a school day, 8 hours on a day school is not in session, or 18 hours in any school week, 40 hours in a week school is not in session, or for more than 6 days during any 7 consecutive days, or between the hours of 7:00 P.M. and 7:00 A.M. On days when school is in session their combined hours of work and attendance in school may not exceed 8.

Minors under 18 may not be employed for more than 5 consecutive hours without a rest period of at least 30 minutes.

NOTICE TO MINOR

The employer should fill in this side of the form before you take it to the doctor who will fill in the reverse side.

SEE REVERSE SIDE FOR DOCTOR'S CERTIFICATE

(Form 2-F. 1.)

Doctor's Certificate
of
Physical Fitness and Age

Serial No.________________County of________________________________

This is to certify that I, (a public Health Physician) for the County of______________________, City
(a public School Physician)
or Town of______________________have personally examined a minor______________________________,
(Name)
and in my opinion this minor is of sound health, is of good physical development and is physically qualified to perform the work in which______is to be employed, which employment is to be____________________ _______
(He or She) (Occupation)
for____
(Company) (Address)

REMARKS: (Specify limitations, if any)____

____

____

Based upon said examination the said minor is, in my opinion, ________ years of age. I further testify that said examination discloses the following facts with reference to the physical development of said minor: Height_______ft.,_______ins. Weight_________pounds. Condition of teeth_______________________, and that said examination revealed_______________________________facts upon all of which my opinion of the age of said minor is based.

This the ________ day of__________________________, 19_____.

Signed: Dr.__________________________________

TO BE ISSUED IN DUPLICATE: Only on presentation of minor (with parent or guardian, if under 16) to the signing physician, and after proper examination. Original to County Superintendent for filing.

SEE REVERSE SIDE FOR EMPLOYER'S STATEMENT OF INTENTION TO EMPLOY

Form 4-F.1
State of Tennessee - Employment and Age Certificate

The Coordinator and the Student-Learner should work with the Superintendent on this form. The form is to be made out in triplicate. The original copy is to be delivered to the employer, the duplicate mailed to the proper Regional Office - Division of Workshop and Factories Inspections, Nashville, Tennessee. Triplicate is to be retained by the Superintendent, who in this case is the issuing officer.

Complete instructions for using this form are printed on the back of the form.

FORM 4-F.1

STATE OF TENNESSEE

EMPLOYMENT AND AGE CERTIFICATE

Certificate No.______ Date______, 19___

New_____ Reissued_____ (Check) County of______City or Town of______, Tenn.

THIS IS TO CERTIFY that______ (Name), a minor,

residing at______, has submitted proof of age as shown below that ___he

is ______ years of age, to the undersigned, representing ______ City or County

Superintendent of Schools for the City or County above named, and the holder thereof may be lawfully employed in accordance with Chapter 201, Public Acts of 1949.

______
City or County Supt. of Schools or Authorized Agent

THIS CERTIFICATE DOES NOT AUTHORIZE THE EMPLOYMENT OF A MINOR IN ANY OCCUPATION PROHIBITED BY THE TENNESSEE CHILD LABOR LAW FOR A MINOR OF HIS AGE.

Evidence of age accepted,
(This evidence must be one of those listed opposite.)

______

______

Evidence must be accepted in the following order:
(1) Birth certificate or transcript thereof.
(2) Baptismal certificate or transcript thereof.
(3) Other documentary evidence, such as Bible record, passport or certificate of arrival, insurance policy, confirmation certificate.
(4) Physician's certificate of age, accompanied by school record of age, if obtainable, also parent's affidavit of age.

Date of birth______ (month) (day) (year) Sex______ Color______

Place of birth______ (town) (county) (state)

Parent or guardian______ (name) (address)

*Health record signed by Dr. ______, showing physical fitness for prospective employment.

*Above named minor is to be employed by______ (name of employer) (address)

______ (industry) ______ (occupation) From______A.M. to______P.M. (hours)

for ______ days a week. Lunch and/or rest period ______ minutes.

Signature of child (must appear on all certificates)______

Signature of parent, custodian, or guardian______

(Signed)______
(County or City Supt. of Schools)

*Above minor has completed______grade in______School.

---

*—These items need not be filled out for minors 18 years of age or over.

DIRECTIONS FOR USING THIS FORM

TO THE ISSUING OFFICER

The regular and the vacation employment certificates are used both as working permits and as certificates of age. The vacation employment certificate should always be used for the minor required to attend school, who has secured temporary work outside of school hours, or vacation periods when school is not in session.

The evidence of age indicated on the face of this certificate should be required in the order given. Insist upon a birth certificate or a transcript thereof, if obtainable, and do not accept the evidence under (2), (3), or (4) until you have received and filed statements showing that the evidence previously specified cannot be obtained.

If evidence as listed under (1), (2), or (3) cannot be obtained, always require both the school record, if obtainable, and the parent's affidavit, together with the physician's certificate of age. Never accept the school record of age and the parent's affidavit of age alone.

Original of certificate should be mailed to employer, duplicate should be mailed to Division of Workshop and Factory Inspection, State Department of Labor, Nashville, and triplicate should be filed in office of City or County Superintendent or his agent.

TO THE EMPLOYER

This certificate furnishes the employer with authentic evidence that the minor for whom the certificate is issued is of the age therein stated for all purposes under the child labor provisions of the Fair Labor Standards Act.

The employer should keep the certificate on file while the minor is in his employ and, in the case of a minor under 18, he should return it by mail to the issuing officer when the minor leaves his employ.

In the case of a minor 18 years of age or over, this certificate is to be returned by the employer to the minor upon the termination of the minor's employment.

Permanent Certificate:

ALL CERTIFICATES MUST BE MADE IN TRIPLICATE: ORIGINAL TO BE DELIVERED TO EMPLOYER: DUPLICATE TO BE MAILED TO DIVISION OF WORKSHOPS, FACTORIES AND ELEVATORS, STATE OFFICE BUILDING, NASHVILLE, TENNESSEE: TRIPLICATE TO BE RETAINED BY ISSUING OFFICER.

Form 520-1 (U. S. Department of Labor)

Application for a Special Certificate to Employ A Student-Learner

This application form is to be used when requesting a special student-learner certificate authorizing the employment training at sub-minimum wage rates of student-learners entitled to the benefits of the Fair Labor Standards Act of 1938, as amended.

This form may be secured from your Regional Supervisor or requested direct from:

Regional Director
U. S. Department of Labor
Wage and Hour and Public Contracts Division
801 Broad Street
Nashville, Tennessee 37203

This form is to be filled out in quadruplicate. It is extremely important to recheck to make certain that every blank is properly filled out. Special attention is called to question number eleven (11). This should be answered Yes and refers to Form 4-F.1, discussed previously.

After this form is completely filled out and signed, the original is mailed to the Regional Director, address given above. The first copy is retained by the training agency, the second copy by the coordinator for his files, and the final copy for the student-learner.

This application should be filed at least fifteen (15) days prior to the placement of the student-learner, if possible. The sub-minimum wage cannot be paid until this form is initiated.

WH-205

Budget Bureau No. 44-R308.9
Approval Expires 6/30/64

U. S. DEPARTMENT OF LABOR
Wage and Hour and Public Contracts Divisions

APPLICATION FOR A SPECIAL CERTIFICATE TO EMPLOY A STUDENT-LEARNER

The certification of the appropriate school official on the reverse side of this application shall constitute a temporary authorization for the employment of the named student-learner at less than the statutory minimum wage applicable under Section 6 of the Fair Labor Standards Act of 1938, as amended, effective from the date this application is forwarded to the Divisions until a special student-learner certificate is issued or denied by the Administrator or his authorized representative, provided the conditions specified in Section 520.6(c)(2) of the Student-learner Regulations, Part 520, are satisfied.

(See Informational Guide for an Employer Making Application)

1. Name and address of establishment making application (type or print):

_______________ (Name) _______________ (Address)

2. Nature of business; if manufacturing, chief products: _______________

3. Name of student-learner (type or print): _______________

Home Address _______________ 4. Date of Birth _______________

5. Name and address of school in which student-learner is enrolled:

____

6. Provide the following information on the school instruction of the student-learner:

Total School Hours a Week	Number of Hours Directly Related to Employment Training	Number of Weeks in School Year	Proposed Beginning and Ending Dates of Employment (Month, Day, Year)	Proposed Graduation Date of Student-learner (Month, Day, Year)

7. Are Smith-Hughes Act or George-Barden Act funds being used for this program? _______ (Yes or No)

8. Was this program authorized by the State Board for Vocational Education? _______ (Yes or No)

9. If the answer to Item 8 is "No," give the name of the recognized local educational body which has approved this vocational training program: _______________

10. Outline the school instruction directly related to the employment training. (List courses, etc.)

(Attach additional sheet if necessary)

(WH62-186)

11. Is an age or employment certificate on file in this establishment for the student-learner__________
(Yes or No)
If a certificate is not on file, see Informational Guide to An Employer.

12. Provide the following information on the employment training of the above student-learner:

(a) How is employment training scheduled? (weekly, alternate weeks, etc.): __________
____

(b) Number of weeks of employment training planned at subminimum wages__________

(c) Number of hours of employment training a week................__________

(d) Proposed student-learner hourly wage rate....................__________

If a progressive wage schedule is used, specify each rate and the period during which it will be paid.
____

(e) Title of occupation..................................__________

13. (a) Number of employees in this establishment....................__________

(b) Number of experienced employees in the student-learners' occupation__________

(c) Minimum hourly wage rate of experienced employees in (b)......__________

14. Outline training on-the-job (Describe briefly the work processes in which the student-learner will be trained and, if machine operations are involved, list the types of machines used).

(Attach additional sheets if necessary)

I have read the statements made above and ask that the requested certificate, authorizing my employment training at a subminimum wage rate or rates and under the conditions stated, be granted by the Administrator or his authorized representative.

__________ (Signature of Student) __________ (Date)

I certify that the student named herein will be receiving instruction in an accredited school and will be employed pursuant to a bona-fide vocational training program, as defined in section 520.2 of Student-Learner Regulations.

__________ (Signature of School Official) __________ (Date)

Title__________

I certify, in applying for this special certificate, that all of the foregoing statements are, to the best of my knowledge and belief, true and correct.

__________ (Signature of employer or representative) __________ (Date)

Title__________

Publications

In order that the Coordinator more fully understands the rules and regulations of the program, several publications should be thoroughly understood by the coordinator and in his files. These publications will amplify the brief outline given in this chapter.

These publications are listed below for your convenience.

1. Administration of Vocational Education
   Vocational Education
   Bulletin No. 1
   General Series No. 1
   Office of Education

2. Rules, Regulations, and Minimum Standards
   Tennessee State Board of Education
   Nashville, Tennessee
   (Latest Edition)

3. State of Tennessee Plan for Vocational Education
   Tennessee State Board of Vocational Education
   Nashville, Tennessee
   1959

4. Labor Laws
   State of Tennessee
   Department of Labor
   (Latest Edition)

5. Employment of Student-Learners
   Regulations
   Title 29 PART 520
   of the Code of Federal Regulations
   United States Department of Labor
   Wage and Hour and Public Contracts Divisions
   Washington, D. C.

6. Handy Reference Guide to the FAIR LABOR STANDARDS ACT
   United States Department of Labor
   Wage and Hour and Public Contracts Divisions
   Washington, D. C.

Chapter V

SELECTING STUDENT-LEARNERS FOR THE INDUSTRIAL CO-OP PROGRAM

The most important single responsibility of the coordinator is that of selecting student-learners to participate in the Industrial Cooperative Training Program.

To find the best boy or girl to fit the job that is available, and to find a training agency in some vocation for each of these boys and girls that will give them opportunities to develop their talents and abilities, is no easy task. This, however, is the task with which the coordinator is confronted.

All the accumulative evidence concerning each student-learner pointing to definite talents or just trends should be taken into consideration and carefully studied by the coordinator. If the student has outstanding ability or talents, coupled with a record of steady application, it is quite easy to make a wise decision.

The coordinator must select the right student to fit the job at hand. To do this, he must find students possessing such qualities, characteristics, and work habits as health, enthusiasm, loyalty, tact, initiative, judgment, the ability to get along with others, and the ability to solve problems - mostly practical. He must look for students who have all or most of these qualities or students who can develop them within a reasonable time.

School records are exceedingly helpful to the coordinator in making selections. The grades of the student throughout his school career and the recorded opinions of all teachers who have made observations throughout these years are very valuable to the coordinator, particularly if he has any doubts concerning the selection or placement of the student.

A visit to the homes of the students and an interview with their parents before placement is made are of importance to the coordinator and frequently throw light on what should be done.

In going about the responsibility of selecting students for the program, the following points are helpful:

1. Students must be 16 years of age and have completed the 10th grade of school.
2. Students selected for participation in Industrial Cooperative Training should be of good scholarship.

3. Students selected for the ICT program must be of good moral character.

4. Select student to meet job specifications.

5. The Coordinator should be very careful to select students who are genuinely interested in the ICT Program.

6. Coordinators should be as certain as possible that the student can adapt himself to the occupation selected.

7. A testing program might help the Coordinator to make proper selection.

8. So far as possible, students selected for the Industrial Cooperative Training Program should be from that group not planning to go to college, unless this work is beneficial in the pursuit of his college course. In such cases, an agreement to this effect should be made with the employer in advance of employment.

9. Secure opinion of teachers in school system, scout executives and others who know the prospective student.

10. Everything being equal, the student who has previously worked in some trade or occupation will make a good Co-op student.

11. Parents must agree to trainee participating in Industrial Cooperative Training.

12. Student should realize that he is preparing for a life career rather than working at a job for temporary financial assistance.

The coordinator of a beginning program is under considerable more handicap in selecting students than one who has been on the job a year or longer. In the case of the former, he must depend upon information secured from the school administrator and from school records. A much more intelligent selection may be made if the coordinator has an opportunity to discuss the prospective students with their teachers. Admittedly, some teachers may be prejudiced against certain students, but all opinions are worth serious consideration. There may be a danger in over-emphasizing careful selection, but it is a good idea not to put in the Co-op Program any student who is not recommended by all those consulted, or whose school record does not indicate serious application.

It is readily understood that a student who is late to work, tardy at school, shows no interest in his or her job, or who has tendencies to do dishonest things, will certainly fail and may cause irreparable harm to the entire Industrial Cooperative Training Program. The Coordinator cannot afford to take chances with any student not 100% all right so far as can be determined.

The coordinator need not expect students to rush into the program--at least not until the program has been in operation a number of years and has gained considerable prestige. In a beginning program, the Coordinator will have to wage a "selling campaign" to obtain the kind and size of group to be in the program. In a program that has been in operation a year or longer, students learn from the Co-op student-learners about the program. Even in a program that has been in operation for a number of years, however, the Coordinator must do everything possible to give information about the Co-op Program in order to attract desirable students.

Below is a rating sheet to be filled out by fellow teachers that should be of much help to the coordinator in securing desired information concerning students making application for the Industrial Cooperative Training Program.

TEACHER'S RATING SHEET FOR INDUSTRIAL CO-OP APPLICANTS

Date____________________

Student's Name______________________________________

Please rate the student on the following:

	Excellent	Good	Fair	Poor
Standing in your course as to scholarship				
Loyalty to: Teacher, Fellow students, and School				
Initiative - is he resourceful?				
Dependability				
Personality				

1. Is this student qualified to represent our school on a job?__________

____

2. For what vocation is he best suited?____________________

____

3. Has he any outstanding abilities or talents?_______________

____

4. Does he perfer mental or physical activities?______________

____

5. Does he take corrections or instructions well?_____________

____

Additional Remarks:______________________________

____

____

Teacher

Industry can be of important assistance in encouraging students to enroll in the Industrial Cooperative Training Program and in their selection. Graduates of the high school trained through the Co-op Program have their roots planted deep in the community. Industry could be almost assured that these young workers would stay with them and make highly valuable employees with a few years' experience.

The question is frequently asked about the use of tests in selecting students. Actually, there is no real need to go to the expense of having prospective Co-op students take a test. If the school has a testing program, the coordinator should utilize test scores to the fullest. Not many schools, however, give mechanical aptitude or other types of vocational tests. If the school is in a position to use tests, the coordinator should avail himself of the opportunity to use them. It is generally thought by psychologists today that using a single test yielding single scores is not sufficient for the purpose of intelligent guidance or selection of an occupation. Cooperation with the Employment Security Office of your town will help you in your testing program.

The coordinator is faced with the problem of what aptitudes should be measured. He is not too concerned about the kind of testing that should be set up for a complete guidance program, although the possibility of doing so should not be discounted by the coordinator as a future possibility. A space relation test and a mechanical reasoning test should be of sufficient scope for the coordinator to use under ordinary circumstances. These two types of tests are not only useful in testing aptitudes for mechanical or manual work, but also test to a large extent one's ability to read, write and understand technical and scientific matter.

The following tests have a high degree of reliability. They may be purchased from the Psychological Corporation, 522 Fifth Avenue, New York 36, New York.

1. Bennett Hand Tool Dexterity Test.
2. Crawford Small Parts Dexterity Test.
3. Minnesota Rate of Manipulative Test.
4. Pennsylvania Bi-Manual Worksample.
5. Stromberg Dexterity Test.

*6. D. A. T. Mechanical Reasoning Test.

*7. Mechanical Comprehension Test.

*8. O'Rouke Mechanical Aptitude Test.

*9. Stanquist Mechanical Aptitude Test.

*10. D. A. T. Space Relation Test.

11. Minnesota Spatial Relation Test.

*12. Revised Minnesota Paper Board Form.

Tests marked with asterisks are written tests and are easily administered. The other tests are manipulative and require equipment and materials and initially are relatively expensive.

THE HIGH SCHOOL STUDENT SHOULD KNOW THAT THE INDUSTRIAL COOPERATIVE TRAINING PROGRAM--

1. Enables him to learn a trade or occupation and his diploma at the same time.
2. Gives him a degree of economic security.
3. Makes transition from school to job relatively easy.
4. Will assist in evaluating his interests, aptitudes and abilities.
5. Will be of inestimable value in developing good work habits.
6. Will give him a practical outlook on education and training, which brings recognition of other school subjects as desirable tools in assisting or in becoming successful.
7. May be the opportunity of immediately finding employment on a permanent basis with the establishment from which he received his training.
8. Develops confidence in his ability to do a job well, to get along with other workers, and to get along with his "boss."
9. Will give him an early opportunity to demonstrate characteristics of leadership in his chosen occupation and in the community.
10. Will develop a keen appreciation of civic responsibilities and democratic principles.

It has been pointed out that the beginning coordinator has a much more difficult job of selecting students than one who has been on the job a year or more. The coordinator starting his second year of the Co-op Program should have had students, teachers, and others recommend students in the spring before school closes. He has also had an opportunity to discuss the program with prospective students, and has had them fill out the necessary application forms. The beginning coordinator must wait until school starts before he can make many moves toward selecting students.

Whether the coordinator is new or not, the following procedure has proved helpful:

1. Have all tenth and eleventh grade teachers make recommendations of those students whom they regard as good material for the Co-op Program.

2. Invite all students recommended to meet and hear an explanation of this plan of training.

    a. Advise all those who have financial means and the desire to go to college to withdraw, unless training is needed as a basis for college work.

    b. Advise all those who are not interested in this plan of education to withdraw.

    c. Request all those who will not be sixteen by the beginning of the next school term to withdraw.

3. Have all students who are interested to fill out the form "Application for Admittance."

4. The records of all those applying are entered on the forms.

    a. Permanent records are investigated for abilities, trends, and aptitudes of students.

    b. Absences and tardies of each of these students are checked on the forms.

5. All parents of the students interested in the program are invited to attend and hear a full explanation of the Industrial Cooperative Training Program.

    a. The Training Memorandum is read and discussed. Points not understood are made clear by the coordinator.

b. Give the Principal an opportunity at this point to explain the program as a school program, not just a work program.

6. Each student is visited during the months of July and August at home as a follow-up to the information given on the application form.

7. In studying the student's permanent school records toward the selection for the Co-op Program, the coordinator should consider the following questions:

    a. Is this student ready to represent our school on a job?

    b. For what vocation is he best suited?

    c. Has he any outstanding abilities or talents?

    d. Does he prefer mental or physical activities?

    e. Does he take corrections or instructions well?

A suggested form for Application is shown on the following page. It can be adapted to meet the needs of the individual coordinator.

INDUSTRIAL COOPERATIVE TRAINING PROGRAM

APPLICATION FOR ADMITTANCE

Student's Name ______________________________ Date ______________
Last First Middle

Address ____________________ Phone __________ Sex ______ Race ________

Distance from school __________ Date of Birth __________ Age ________

Father's Name ______________________ Occupation ______________

Mother's Name ______________________ Occupation ______________

Occupation Desired - 1st ______________________________

Reason ______________________________

Occupation Desired - 2nd ______________________________

Reason ______________________________

Do you plan to attend college? ________ Explain your answer ______________

____

High School Academic Record
(To be completed by the Coordinator)

Freshman Year		Sophomore Year		Junior Year		Senior Year	
Subject	Grade	Subject	Grade	Subject	Grade	Subject	Grade

Times absent this year ________ Times tardy this year ______________

Have you ever worked? ________ Where? ______________________

Give names of two persons (no kin to you) for reference:

______________________ ______________________

In what extra curricula activities have you taken part? ______________

____

Are you a member of any of the school's major sports teams? __________

Which one/ones? ______________________________

Are you now employed? ________ By whom? ______________________

Signed ______________________

Special Problems in Selecting Students

The coordinator is likely to run into many problems in selecting students for the Co-op Program. There is no iron-clad rule which can be offered in settling these problems. The degree of training the coordinator has received will have a great deal of influence in solving special problems successfully. It is the wise coordinator who discusses his problems with other coordinators and exchanges ideas in general. No amount of training, however, will take the place of good common sense in dealing with problems.

The problems are many and varied. It may be a matter of pressure to get a student in the Co-op Program, although information indicates his undesirability. It may be the matter of teachers or the faculty of the school and the principal himself wanting to unload undesirable students into the program. Oftentimes, a training agency may want a particular student for reasons which exist in the plant with other employees, and the coordinator knows that this student does not measure up to the standards he wishes to maintain. Coordinators sometimes make trouble for themselves, in order to keep the good will of the employers, by trying to fill openings with students who they know will not measure up to standards. In the long run, anything but good will is secured by this policy.

The Coordinator should take his time in selecting students. In most cases, particularly where the program has been operated in such a way as to build good will and prestige, a great many more students will apply for the program than can be placed. This allows the Coordinator to be discriminating and selective in every way. Be impartial, but do not forget to be a human being.

It is generally thought that the best procedure is to select the desired number of students for the program and then find the jobs for those. This is particularly good from the student interest point of view. This does not hold true in every case, however, so the coordinator must be able to not only fit the job to the student but the student to the job, as the situation demands. Care must be used or the coordinator will find that the program is top-heavy with too many students in one kind of occupation. Select the students who will give the program balance as to the occupational opportunities of the school community.

There is not an established policy in regard to the number of boys or the number of girls to be selected for the program. This will naturally vary from community to community. Too many factors enter into making a ruling on the matter. It is probable that there will be more boys than girls who wish to participate in the program; however, the Coordinator and other school authorities must always give due consideration to the following factors: (1) the needs of the community as determined by an occupational survey and, (2) the number of worthy, available students.

The importance of the guidance counselor must not be overlooked in the matter of selecting students. By and large the Coordinator should work very closely with the counselor. Unfortunately, many counselors look upon any kind of vocational education as being for the less able students. This feeling may be overcome if the Coordinator talks with the counselor about the Co-op Program and is consistent in his request for worthwhile students.

If possible, the Coordinator should take the counselor on visits to places where the Co-op Student-Learners are working. This gives the counselor an opportunity to see the student-learners at work, talk with employers and other employees. Furthermore, the counselor will get the idea that it does take a good student for the Co-op Program and other vocational courses.

Chapter VI

SELECTING TRAINING AGENCIES

One of the first duties of the Coordinator is to select Training Agencies in which the Industrial Cooperative Training Program Student-Learners may work. This responsibility involves (1) an occupational survey of the community, and (2) the kind of training agencies desired. Co-op students must be placed in some TRADE or INDUSTRIAL occupation.

Making Occupational Survey

There is no need for the Coordinator to make an elaborate survey. The only reason that a survey should be made at all is to determine the kinds of trades, industries, and occupations that are followed in the community. The main object in making the survey is to list possible training agencies and their locations.

The coordinator can make a casual survey by examining a telephone directory. From it he can make a list of possible training agencies. Later, he may walk or drive around to inspect the places on his list. It is even possible to make all the survey needed by walking or driving around the community and listing the likely looking places. This procedure is especially desirable for the coordinator who is beginning a program. Later, all during the year, he can broaden his knowledge of the community and is able to list more likely training agencies.

The reason it is unnecessary to make an elaborate survey is that very few students, compared to the total number of employees, will enter any one of the occupations in the community. Also, the coordinator in most cases finds jobs for the students and not students for the jobs. Of course, in the latter case, if an employer requests the coordinator to send him a trainee, an effort is made to find one for him.

In selecting training agencies, the coordinator must bear in mind that the trade or occupation should have two years of training possibilities and that the employment of a Co-op Student-Learner will not displace a regular worker.

The following points summarize the kind of training agencies desired:

1. List all possible training agencies in the community that could cooperate in the Industrial Cooperative Training Program.

2. Only those training agencies which have jobs that offer sufficient number of hours of training should be selected.

3. The training agency should have facilities for giving the necessary training.

4. The training agency must not be a place that might have a bad moral influence.

5. The training agency should be accessible.

6. The training agency should not be injurious to health of trainee.

7. The personnel and its training should be considered.

8. The prestige of the agency in the community should be considered.

9. The possibility of permanent employment should be considered.

10. It must be understood that trainees will not displace a regular worker.

11. The training agency should be of a type that pays good wages to full time workers.

12. Stability of employment should be a factor in selecting training agency.

13. Training agency cannot be of hazardous type.

14. Competent employers who will cooperate and maintain cordial relations with the school should be selected.

The coordinator should not overlook new industries moving into the community. While most new plants are anxious to get into production, the management recognizes the fact that a tremendous training program is ahead. Since management is thinking in terms of training, it might be glad to cooperate with the school in a training program.

Any new industry in a community is in competition for desirable workers with older plants. The coordinator can do a good selling job by pointing out that students training through the Industrial Cooperative Training Program will give the plant intelligent workers on a permanent basis in a short time. Most new plants begin early to look for potential supervisors and their management should know that students trained in their plant under the Co-op Program is one of the better sources in finding employees capable of going up in the organization.

It may be well for the coordinator to use a check sheet such as the one suggested on the following page to assist him in determining if a potential training agency measures up to requirements for the placement of a Co-op Student. The sheet should, of course, be kept confidential since the name of the establishment is on it.

To use the sheet, add the checks in each column. This is then multiplied by the value given each column: Poor - 0; Fair - 4; Good - 7; Excellent - 10. Next, add the products of each column. The score thus obtained is the training value. Any training agency scoring less than 60 would be considered doubtful as a place of training for a Co-op student.

TRAINING AGENCY CHECK SHEET

Establishment____________________ Address____________________________

Factors	Poor	Fair	Good	Excellent
1. Opportunity for permanent employment				
2. Training facilities				
3. Accessibility				
4. Type of personnel				
5. Stability of employment				
6. Wages of employees				
7. Standing in community				
8. Promotion policy				
9. Working conditions (Health and hazards)				
10. General influence				
Column Totals				
Multiplied By	0	4	7	10
Column Product				

TRAINING AGENCY SCORE________________

In order for the coordinator to use the check sheet more intelligently, an explanation of the factors used is given:

1. Opportunity for permanent employment. It is highly desirable that the training agency be in position to give the trainee permanent employment at the completion of the training program. Expanding business would rate high on this factor. Overcrowded businesses or occupations gradually passing out would rate low.

2. Training facilities. To give all-round training, the agency must have sufficient facilities in respect to machines, tools, equipment, etc. In addition, the type of occupation included in the program should be one that has a recognized learning period of two years or more.

3. Accessibility. Everything else being equal, the training agency must be in reasonable distance or accessible to the trainee. A training agency desirable in other respects may score low on this if it is five or six miles from the school or trainee's home, unless adequate bus service is available or trainee has a car.

4. Type of personnel. Since the training is on-the-job and instruction is given by personnel in the training agency, the personnel should be above the ordinary. They should be thoroughly competent in the skill and technical aspects of the trade or occupation. Also, they should take pleasure in and cooperate with the training program.

5. Stability of employment. The training agency should have a reputation of continuous operation. It should be one which has a record of no lay-offs, lock-outs, close-downs, or extensive periods of curtailment.

6. Wages of employees. The agency should be one that pays good wages to its employees. Wages should be at least comparable to those paid in the same or similar occupations in the community.

7. Standing in the community. The agency should have the respect of the people in the community. It should be known as a fair, honorable, and dependable establishment. It should be one that the community is glad to have in its borders.

8. Promotional policy. Agencies that make it a policy to train and promote their own personnel would score high on this factor. This type agency offers good possibilities for keeping its better personnel. Morale is high in such establishments.

9. Working conditions. The agency should have a good record of accident prevention. It should be one that also presents few, if any, conditions that might affect health of workers.

10. General influence. This factor considers the all-round moral influence of the agency on the trainee, its participation in civic affairs, the attitude it takes toward the welfare of its personnel, and its community.

Chapter VII

PLACEMENT OF THE STUDENT-LEARNERS

After students have been selected to participate in the Industrial Cooperative Training Program, the coordinator begins to place them on the jobs available. The matter of placement may be divided into several heads for discussion: (1) preliminary steps to inform employers of the Co-op Program, (2) securing jobs for students, (3) sending students to employers for interview and (4) special problems in placing students.

Preliminary Steps

The coordinator does not wait until he has students to place to begin his campaign of placement. The beginning coordinator should start this important activity the day he arrives in the community. Coordinators who have been on the job several years, and those on a twelve months basis, no doubt are carrying on placement activities all the time. Even the older coordinators need to be constantly on the alert to keep the program before employer groups.

It is important to stay before the employers for the reason that they are the ones who employ the students and make the program possible. The coordinator should make use of every available agency in carrying on the placement campaign. Some of the agencies that may be used are:

1. Trade Associations
2. Service Clubs - Rotary, Kiwanis, Lions, etc.
3. Manufacturers Association
4. Building Contractors Association
5. Professional Associations
6. Chamber of Commerce
7. Business Men's Association
8. Radio and Television
9. Women's Clubs

It is possible that the coordinator may be asked to speak before several of the groups mentioned. He should have his talk thoroughly organized, concise, and to the point. He should have at his command all the salient points about the Industrial Cooperative Training Program that make it desirable for employers to cooperate with the school in carrying on this particular type of vocational education. The points listed below are suggestive:

1. The program gives the employers opportunity to cooperate with the school in setting up an efficient type of vocational training.

2. It gives employers opportunity to train potentially permanent employees according to their own methods.

3. It gives employers opportunity to select students of a superior type who will be able to go up in the organization.

4. It may be pointed out that a trained worker is worth more than the ordinary beginner because he is studying related material during the training period.

5. Most communities take pride in their schools. It will please people of the community to know that business establishments are cooperating in a worthwhile school program.

6. It appeals to employer's civic pride to participate in the program.

7. It enables employers to assist in training boys and girls for useful living which gives them opportunities to find employment upon completion of high school, thus taking them off the street where they might become social problems.

The coordinator should carry on a discreet campaign of publicity in the local newspapers in order to keep the program before the public and employer groups. During the year it might be possible to get the newspapers to print several feature articles on the Co-op Program, alongwith pictures showing the kinds of work being done by the student-learners.

Securing Jobs

It must be remembered that talking before employer groups, service clubs, and writing newspaper articles will not get jobs for students. These activities introduce the program and the coordinator to the men who may employ students. The jobs for the students must be secured by personal visits of the coordinator to the employers.

Before making these calls, the coordinator should rehearse carefully what he wants to say. The same arguments may be used as in the talks. Let the employer do as much of the talking as possible. In all probability, he knows the coordinator and the entree should not be difficult. The coordinator should not overdo his "personality." Make the visit brief, consistent with presentation of what the school is doing. The best point the coordinator can make is that he has a student who wants to do the kind of work the employer has in his power to give.

The coordinator should present all the facts and present them tactfully. Some coordinators hesitate to discuss the Training Memorandum on the first visit. A worse mistake cannot be made. By discussing every aspect of the program, including the Training Memorandum, the employer is able to see what the school is trying to do, and he realizes from the beginning his responsibilities if he cooperates with the school. That is as it should be, and to present the matter of the Training Memorandum to him after he has perhaps decided to take a student is likely to cause him to refuse to have anything to do with the program.

If the employer agrees to take a student, the coordinator should make arrangements to send two or more students to him for an interview. The employer should select the student he wants, and the only way he can make a selection is to have an interview with them. If the employer decides he cannot take a student, the coordinator should accept the fact graciously. Stay in contact with the employer and retain his friendship or acquaintance for the possibilities of future placements.

Sending Students for Interview

Two or three students should be sent to an employer for an interview in order that he may have the student of his choosing. If only one student is available, of course, only one will be sent. In case the only student available is not satisfactory to the employer, the coordinator should try to find another. If such a student cannot be found, it is better to tell the employer that one cannot be found to meet the desired standards rather than to place one and have him fail and disappoint the employer.

The student should be prepared for the interview. The coordinator would do well to rehearse the entire procedure with the student, with himself acting as the employer and the student acting as an applicant for the job. Allow other students to criticize the procedure. Care must be taken that students are not overcome with self-consciousness. Attempt to get them to be natural and at ease.

Arrange for the two or three students applying for the job to go for interviews at different times. Before they go for interviews, the coordinator should check them over to see that they are properly attired and that their persons are clean. Check especially fingernails and for polished shoes. The following information should be given students in regard to the interview:

1. Report on time for interview.
2. Send name in by secretary.
3. Leave hat outside if place is available.
4. Do not smoke or chew gum while in office.
5. Approach: "Mr. Jones, I am Bill Smith. I was sent to you by our coordinator at the school, Mr. Brown, to make application for the place you have for training a person on the Industrial Cooperative Training Program."
6. Remain standing until invited to sit.
7. Sit straight in chair and be attentive.
8. Do not try to read letters or play with articles on desk.
9. Allow the employer to take the lead in the conversation.
10. When conversation gets around to the job, the student should state his qualifications briefly and clearly.
11. Immediately after student has made application for place, he should arise and begin to withdraw from interview.
12. He should thank the employer for his consideration and time in giving the interview.
13. Make departure from office unhurriedly and in a dignified manner.
14. Avoid wisecracks.

After employer has interviewed students, he notifies the coordinator of the one he will take. The coordinator fills out the Training Memorandum and secures the necessary signatures. He then sits down with the employer and secures his suggestions for making out the Schedule of Processes, which is to be attached to the Training Memorandum. The student-learner is then notified when to report for his employment-training.

Special Problems in Placing Students

The following points should be kept in mind by the coordinator in a highly organized community:

1. It may be unusually difficult to place a student in a closed shop.
2. Frequently, unions have their own apprenticeship programs.
3. In a closed shop, the union may want the school to relinquish control of the student so far as supervision on the job is concerned.
4. Unions in a closed shop may want to dictate the jobs the student is to do.
5. If the shop is not a closed shop, the unions may be suspicious of students coming in and may not want to cooperate anymore than would a closed shop.
6. In either the closed or open shop, the unions may bring pressure to force the students to join the union.
7. The union may want to set the wage scale for the student-learners.

Summary -- Placing Students on the Jobs

I. Preliminary Steps

  A. Make survey of student material

    1. Check occupations desired by students

    2. Determine qualifications of the student for the occupation

      a. Scholastic record
      b. Recommendations of teachers
      c. Personality of the student as judged in personal interview
      d. Parent's estimate of student's ability
      e. Interview several and pick 2 or 3 you feel best suited

    3. Outline position in general way to 2 or 3 selected students

    4. Check theirs and parent's reaction

  B. Make survey of job

1. Type of work
    a. Physical - mental
    b. Individual - cooperative
    c. Active - sedative
    d. Indoor - outdoor

2. Opportunities
    a. Future of occupation
    b. Future in training agency
    c. Future in city

3. Qualifications for job
    a. Based on A above and experience of employer

4. Characteristics of employer, personnel of store or shop, and any unusual ideas or demands.

II. Detailed Steps

A. Outline position in detail to individual

1. Type of work

2. Type of personnel

3. Opportunities

B. Secure interview with employer

1. Time and place

2. Individual interview

3. Send two or more and allow employer to make final selection

C. Counseling before placement

1. Explaining to the student the following points:
    a. Type of work for which he is being considered
    b. Type of people with whom he will work
    c. Opportunities on the job
    d. Hours
    e. Wages

f. Conduct on the job
g. Method of interviewing the prospective employer
h. Possibility of not getting the job

2. Conduct a practice interview

D. Follow up interviews with

1. Employers

2. Students -- correct faults

E. Final placement

1. Work out and check schedule of processes

2. Require all concerned to sign agreements

3. Make sure all details are fully understood by student, employer and family

III. Problems That Are Likely to Arise and Suggested Ways of Overcoming Them

A. Having more students than jobs

1. Select students best suited for the jobs

2. Counsel the students not accepted for employment on the following points:

a. Further preparation for the job
b. Ways of improving personality
c. Suggest improvement in attendance and scholastic records
d. Cite instances of students who waited until they were ready for job before attempting one

B. Having a job for which you haven't the right student

1. Frankly tell the employer that you cannot fill the job at that time

2. Begin at once to develop someone for the job

C. Unemployables

1. Determine reason for unemployability
2. Direct the student into the proper channel, rehabilitation, etc.
3. Try to keep the student from being antagonistic toward school and business

D. Wages

1. Sell employer the program as a training program and not as cheap labor
2. Sell employer and student on the idea of wages advancing in proportion to the increased earning capacity of the student as he works on the job
    a. If program and job are worthwhile, employer can well afford to pay salary

E. Employer objecting to students, family record, etc.

1. Determine cause
2. If not of consequence, attempt to overcome
3. If true, get another trainee

Chapter VIII

STUDENT'S SCHOOL AND JOB SCHEDULE

An important part of the Industrial Cooperative Training Program is the schedule of school work and job experience of the student-learner participating in the program. The one thing that must be remembered is that the hours in school must not exceed the hours spent on the job. It will be necessary for the school to make some concessions, in many instances, to arrange a satisfactory schedule. Schools unwilling to make concessions are not ready for the Industrial Cooperative Training Program. The coordinator has a very definite responsibility in making out schedules. The following factors should be considered:

Student's Schedule of Work

A. On Job

1. The trainee has a definite schedule of work. It is important that he be punctual every day.
2. The trainee should work not less than three hours per day. A major portion of his work must be done during the normal school day.
3. The work schedule is arranged by the coordinator and the employer.
4. Sufficient time should be allowed the student-learner to get lunch and get to his job between the end of his class day and time to begin his work schedule.
5. Student-learners must comply with rules and regulations of the plant where they are employed.

B. In School

1. The school schedule demands the cooperation of the coordinator, principal, and other teachers in the system.
2. The school schedule must meet the State requirements in regard to number of units and grouping of units.
3. If possible, the related class should be scheduled during the last periods of the Co-op student-learner's school day, so that it will be his last period before meeting his work schedule.

4. All required school work should be scheduled so as to allow trainees to complete it early in the school day.

5. Participation in the Co-op Program practically excludes, or makes it difficult for the student to participate in, extra-curricular activities of the school.

6. The coordinator should advise the student-learners of the courses to take in the regular school curriculum.

In making out student-learner's schedule, the coordinator should plan every detail carefully. Some employers may want a student-learner to work in the morning. Since 15 hours per week must be spent on the job, this may present a problem in a student scheduling his school work. If at all possible, the coordinator would do well to have all work experience performed in the afternoons.

The coordinator should have in mind every step he will make in arranging the schedule. No sample schedules are offered, as these schedules vary too much from school to school. The following check points should help the coordinator fit his scheduling into the framework of his particular system.

Preliminary Steps to Carry Out the Responsibility

1. Become familiar with

    a. Federal requirements
    b. State Plan
    c. Local board requirements
    d. School administration policy

2. Have a thorough knowledge of

    a. School curriculum
    b. School schedule of classes
    c. Faculty personnel
    d. School physical facilities

3. Secure from training agency information in regard to

    a. Hours of work on each job
    b. Hours permitted for part-time workers or student-learners

General Requirements

1. Student-learners must spend as much time in regular employment as in regular classes.

2. State Plan requires, as a minimum:

   a. 15 hours per week on job
   b. 5 periods of instruction in related subjects
   c. A program for nine months

3. Coordinator's responsibilities for related instruction.

Detailed Steps to Carry Out These Responsibilities

1. Arrange with the principal for related instruction periods.

   a. Establish authority to properly schedule student-learner's classes.
   b. Schedule classes in morning hours.
   c. Have student-learners dismissed at noon hour.
   d. Schedule coordinator's instruction in two consecutive periods, if possible.

2. Training agency should agree to the following requirements:

   a. For student-learner to spend three or four hours on job each day.
   b. For exact time period on job in afternoon.
   c. For early morning hours of work - in special cases.
   d. Include these requirements in Training Memorandum.

3. Student-learner should agree to the following requirements:

   a. An exact schedule of related instruction.
   b. An exact schedule of work on the job.
   c. Guidance in the selection of his other school subjects.
   d. Signing of the Training Memorandum.

4. Arrange with Parents

   a. Complete agreement as to student-learner's work schedule.
   b. Understanding agreement as to school schedule and nature of school instruction.
   c. For signing Training Memorandum.

Special Problems

1. Cooperation of Principal and faculty.
2. Advantageous scheduling of related instruction.
3. Midday dismissal of student-learners.
4. Arranging time period on job to fit the interests of the employer and the student-learner.
5. Avoiding overworking student-learners.
6. Avoiding night work of the student-learners.
7. Having student-learner and employer realize desirability of two years training in some occupations.
8. Having student-learners and parents realize that time spent in the Co-op Program is definite vocational training and some general school work must be given up.
9. Scheduling academic work along with the Industrial Co-op Program in order to make college entrance possible, if the need is realized later.

Unfortunately, student-learners in the Industrial Cooperative Training Program must forego participation in the athletic program of the school. There is no valid way for a student-learner to play football, for instance, and be in the Co-op Program. Once and awhile an employer is a rabid football fan and is willing to make most any kind of concession so far as work experience is concerned, if the trainee plays football. One must be extremely careful of this or the program may fall into disrepute. There is a great deal of danger in compromising with policies one semester and attempting to enforce them strictly in another. If basketball practice is at night and the games are at night, it is possible for a student-learner to be on the basketball squad. However, trips from the local community would interfere with work experience.

There is no reason why the Co-op student-learner cannot participate in most of the other activities of the school. Clubs, activity periods, plays and other such events may be engaged in fully during the time the student is in school.

Coordinating Work Time and School Time

Many school administrators and teachers dislike having students leave school before the end of the normal school day. Actually, the student is not leaving school; he is simply going to another place to get shop training and is under the supervision of the school while there. The fact that school credit is given for the work experience should be evidence enough to the most calloused teacher that the shop training in the trade or industry meets the standards of the school. As a matter of fact, generally it is far superior to what the school could give in that particular area because it would be impossible to have adequate shop facilities for so many areas of instruction. Tradition, however, is a difficult thing to overcome and some administrators and teachers cannot become reconciled to students leaving early. The coordinator will have to work understandably with them.

The coordinator should assist the student-learners in arranging all phases of their school schedule and work program. They should be advised to take meaningful courses in order to prepare themselves as competent and well-rounded citizens.

Chapter IX

ADVISORY COMMITTEE

Need for Advisory Service

Many vocational educators feel that all vocational education programs should be organized and conducted with the advice and counsel of representative groups. During the development stages of Trade and Industrial Education, many State Plans for Vocational Education made provisions for representative advisory committees. However, as program development continued, some vocational educators lost sight of this feature and organized and conducted programs without the advice and counsel of a truly representative advisory committee, for which they soon were criticized by labor and management.

The popularity of advisory committees can be explained in a number of ways. They are popular with administrators because:

1. They provide advice not easily obtainable elsewhere.

2. They have important public relations potential.

3. They offer external support of policies.

Advisory committees are popular with labor and management because of the opportunity afforded to present their views to public officials before action is taken. They are approved by the public at large because of added assurance that the public's interests are protected.

Trade and Industrial Education, because it prepares students for specific occupations, needs the close cooperation of the citizens in the community. Educators need the assistance and criticism of the real workaday world to insure that the educational programs are up-to-date and the occupational preparation useful. Educational programs designed to meet the manpower needs of the community, state, and nation should be planned in accordance with current employment trends, and many desirable benefits accrue when interested and qualified laymen participate in the planning. The advice and counsel of representative advisory committees enable educators to maintain continuity in trade and industrial courses.

To be most effective, trade and industrial education needs the support of community industries and the good public relations a strong advisory committee can create. Labor organizations and management groups can be either passive or enthusiastic supporters of a school; the degree of their support will depend on the extent to which they have been consulted.

A trade advisory committee representing joint labor-management interests in the community can usually enlist the maximum support and cooperation of industry. The efficiency of labor, management, and education, as an educational team, is often largely responsible for successful programs of trade and industrial education.

Types of Committees

An advisory committee for part-time cooperative training may be either a general advisory committee or a craft committee. The committee is classified as a craft committee when the student-learners are all employed in the same trade and industrial occupation and a general advisory committee when the student-learners are employed in several of the predominant occupations of the community. If several of the student-learners are being trained in the same occupation, a subcommittee may be formed to serve as a craft advisory committee for training in this occupation. It would include members of the general advisory committee representing the occupation and would invite additional representatives of management and labor from the occupation to serve on the subcommittee if needed. Its activities would be confined to the occupational area from which the members were selected.

Functions of Committees

The functions of an advisory committee for part-time cooperative training are usually much broader in scope than the functions of a craft advisory committee. Special problems are involved when students receive their occupational training through employment in business and industrial firms in the community. An advisory committee for part-time cooperative training has special advisory functions in addition to some of the regular functions of craft advisory committees. The advisory committee often performs the following additional functions:

1. Assists in making a community survey to determine the need for the program.
2. Advises as to general training policies.
3. Assists in setting qualifications for selecting students.
4. Assists in placement of students.
5. Advises as to fitness of training agencies.
6. Reviews and recommends approval of training plans and training agreements.
7. Recommends wage scales for various occupations.
8. Recommends cancellation of training agreements.
9. Participates in evaluation of programs.
10. Assists in development of a good public relations program.

Establishing the Committee

In most cases, the person directly responsible for the supervision of the program is responsible for the organization and utilization of the services of the committee.

The approval of the superintendent of schools and the board of education should be secured before any advisory committee is organized. School boards and school administrators sometimes fear that advisory committees will assume administrative or legislative authority which is the responsibility of the board of education. The function of the advisory committee and the values derived from its use should be clearly explained to members of the school board. If the committee is to function properly, it must have the respect and confidence of the school administration.

Selection of Members

Securing competent people to serve on advisory committees is an important and sometimes difficult problem. When selecting members, it is important to keep clearly in mind the purpose to be served and the type of assistance needed in planning and evaluating a school program. It is also well to keep in mind that advisory committees not only provide advisory service but also provide the school with an opportunity to do an educational selling job with members of the committee. Some of the important personal qualifications considered in the selection of members of advisory committees are:

1. Intelligence, social vision, and leadership experience.
2. Interest and willingness to work in the promotion of the program.
3. Good character and integrity.
4. Civic mindedness and an unselfish spirit. Courage to express their ideas and defend their convictions.
5. Disinterestedness. The more ambitious and aggressive people do not always make the best members. People who are interested in their own prestige may not act in the best interest of the community. Radicals prone to inject politics or pet ideas into discussions do not make good committee members.
6. Experience in the craft or occupation represented. It is not necessary or desirable that all members be older persons with many years work experience. Young business executives and craftsmen of proven ability and skill are more likely to work hard to assist the school than some older men who have lost contact with young people.

Number of Members

Advisory committees for part-time cooperative training programs usually consist of two employers, two employees, a representative of the lay public, and a school representative.

It is sometimes advisable to provide alternates for each member of the committee.

Experience has shown that there should be equal representation of employers and employees, along with a representative of the general public, on school advisory committees.

Procedures for Selecting Members

There are many different procedures followed in the selection of members. Representatives should be acceptable to both the school and the group they represent. The selection is best worked out through the joint efforts of the two parties concerned. When organized groups are to be represented, they should be asked to nominate one or more members for consideration by school officials. Committee members selected in this way speak with authority for the group they represent rather than as individuals; they voice the opinions of the group rather than their own personal feelings. It is a good policy for school administrators to discuss the qualifications of committee members with the groups to be represented before any members are nominated for consideration.

The school administrator will find it helpful to confer with prospective members regarding the functions and duties of the committee prior to the selection of specific individuals. In this way, school officials can be more certain of appointing interested members who have adequate time to devote to committee work and have a sense of civic responsibility.

Organizing the Committee

The most effective advisory committees are those in which a strong bond of respect exists among the members for each others' characteristics and abilities, as well as a general understanding and acceptance of committee objectives, a desire to accomplish them, and a feeling of teamwork. Such a climate helps to produce:

1. An appreciation of the problems of the school and a desire to be of assistance.
2. Suggestions for the solution of specific problems.

3. The improvement of solutions through discussion.
4. A critical, yet fair, examination of ideas presented by the school.
5. A willingness to assist in the implementation of recommendations.
6. Encouragement and public support of the school program and personnel.

The committee that meets only once or twice a year will have greater difficulty in achieving this kind of climate than one which meets more frequently, but much can be accomplished by committees meeting irregularly.

The chairman is a key member of a committee, and its success will depend largely on the leadership he provides. He must be sensitive to the views of the members; he should be able to listen critically and to criticize intelligently. Other desirable characteristics are good judgment, fairness, and reasonableness.

The teacher-coordinator of part-time cooperative training programs usually serves as the official school representative on the advisory committees for that program. It is a good policy for the school superintendent, the director of vocational education, and the principal of the high school to meet with the advisory committee also when they can arrange to do so.

Any school official who serves as school representative should be an ex-officio member of the committee. He attends the meeting to receive advice, not to give advice.

Meeting Dates

There is no general agreement on the maximum number of meetings to be held each year, or whether meetings should be scheduled at regular intervals or called as necessary. The chairman might call a special meeting, or the school representative might suggest to the chairman that a meeting should be called.

If committees are to be effective, they must be given work to do. Unless a school intends to use an advisory committee, it should not be appointed.

It is generally recommended that committees meet on a certain day of a specified week of each month, so that members will acquire the habit of reserving that date for meetings. Reminders should be sent to members approximately a week before the day of the meeting. If a special meeting is called, the date should be set far enough in advance to assure full attendance.

Planning a Program

If the interest of the committee is to remain on the high level desired, there must be definite planning for each meeting. Meetings which are not organized are a waste of the committee members' time and after one or two such meetings, it will be practically impossible to get the members to attend a meeting, and rightfully so.

The coordinator should arrange some time with the chairman of the committee to plan an agenda for each meeting. This agenda should be well formulated and pertinent to the objectives of the committee. It is advisable to prepare copies for each member of the committee and mail the agenda out with the announcement of the committee meeting.

In making out the agenda the following check list should prove helpful:

1. Is it a real problem?
2. Is this a problem which the school earnestly desires to solve?
3. Will the school use the committee's recommendations?
4. Is this a question in which the committee is interested or can become interested?
5. Is the committee competent to discuss and make recommendations on this type of problem?
6. Do members have sufficient knowledge of facts and background information to make worthwhile suggestions?

As the problems are discussed by the committee, good minutes of the meeting should be kept by the secretary, another of the key members of the committee. If the action of the committee is worthwhile, then the action is worth recording.

The coordinator should assume the responsibility for seeing that the meeting place is scheduled and prepared for the meeting. Tables and chairs are preferred for the furniture. Paper and pencils should be provided. Have clean ash trays available and other items for the meeting available as needed.

The material for this discussion is taken from the U. S. Office of Education Bulletin for Trade and Industrial Education OE-84009, dated 1961, Organization and Effective Use of Advisory Committees. The coordinator should secure a copy of this bulletin for further study.

Chapter X

THE CLASSROOM

Before discussing the work of the coordinator and the student-learners that is to be accomplished in the classroom, it is considered advisable to give some consideration to the size and type of classroom needed, along with a suggested list of equipment and supplies.

The coordinator and the principal should select a large, well lighted classroom and begin equipping it with the necessary furniture. Due to the type of instruction carried on in an Industrial Cooperative Training Program related class, it is necessary to equip the room with tables and chairs, rather than the conventional type school room seat or desk.

Equipment Necessary

The necessary equipment, according to the general requirements of the State Plan, is as follows:

1. Physical

    a. Tables and Chairs
    b. Chalk Board
    c. Bulletin Board Space
    d. Chalk and Erasers
    e. Typewriter, Table and Chair
    f. Duplicator, or Access to One
    g. Teacher's Desk
    h. Bookcases
    i. Magazine Rack
    j. 4-Drawer, Locking Letter Files
    k. 5 x 7 Card File

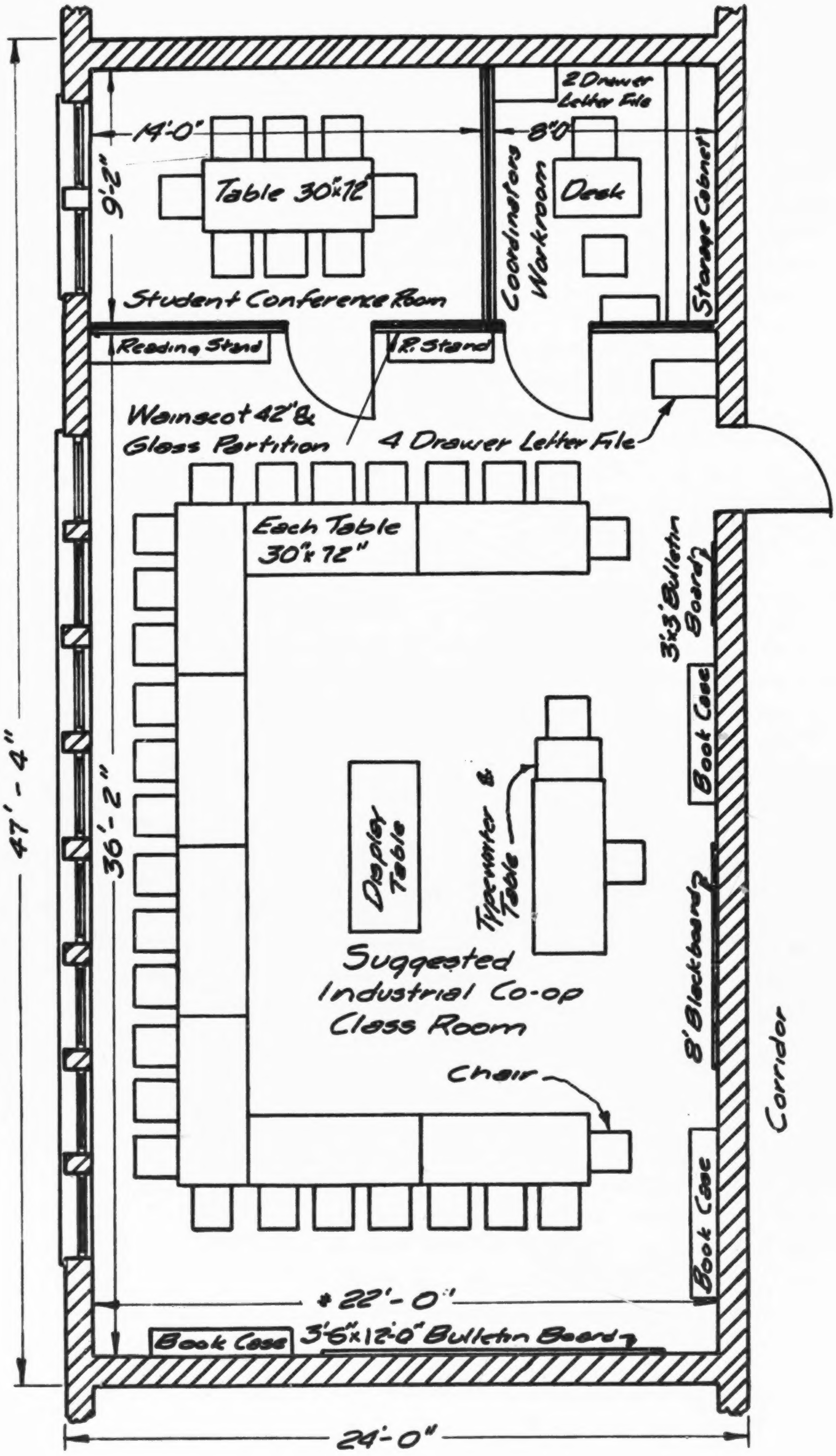
2. Supplies

    a. Stationery
    b. Stamps
    c. Duplicator Supplies
    d. Paper, Second Sheets, Carbon Paper
    e. File Cards and Indices
    f. File Folders and Indices

Arrangement of Furniture

The tables should be arranged in a U-shape with the chairs on the outside of the U. The coordinator's desk should be between the tips of the U and slightly outside the enclosed space. The tables and chairs should be so placed that the student-learners will not face the daylight entering through the windows. With this arrangement, it is apparent that the coordinator's desk will probably face the windows, but as the good coordinator rarely has an opportunity to sit at his desk, except before and after sunrise and sunset, respectively, his eyes will not be damaged by undue amounts of light entering through the windows.

As the classroom progresses, the many advantages of the U-shaped arrangement of furniture will be evident. A plan of arrangement of a typical Co-op Classroom is shown on the following page. It is a general plan followed by most of the operating programs, but as the coordinator proceeds with his work, he will make adjustments to fit the particular room.


14'-0"
8'-0"
9'-2"
2 Drawer Letter File
Table 30"x72"
Coordinators Workroom
Desk
Storage Cabinet
Student Conference Room
Reading Stand
R. Stand
Wainscot 42" & Glass Partition
4 Drawer Letter File
Each Table 30"x72"
3'x3' Bulletin Board
Book Case
47'-4"
36'-2"
Display Table
Typewriter & Table
Suggested Industrial Co-op Class Room
8' Blackboard
Corridor
Chair
Book Case
*22'-0"
Book Case
3'-6"x12'-0" Bulletin Board
24'-0"

* Or Regular Classroom WIDTH For Bldg.

Scale $\frac{3}{16}$ = 1'-0"

Chapter XI

TEACHING RELATED MATERIAL

One of the most difficult aspects of the Industrial Cooperative Training Program is to secure effective results in teaching related material of the trade or occupation at which the student-learners are working. This does not mean, however, that it cannot be done or that it is not being done. It does mean that the coordinator must be extremely careful and prepare for this important responsibility with considerable thoroughness.

Teaching related material involves two major topics: (1) securing material, and (2) teaching it.

Securing Related Material

It is the responsibility of the school to furnish a classroom where related material is to be taught and to furnish the material for teaching. Local school boards must show that an adequate budget has been provided to purchase the necessary related and technical material before the Industrial Cooperative Training Program is permitted to be inaugurated.

Securing related material should not cause any great amount of difficulty. As a matter of fact, there is such an abundance of material in some fields that the problem is one of deciding what to get. Most states have issued bibliographies listing by trade and occupation the desirable books or other materials that would be suitable for related instruction. Practically all the Southern States have assisted each other in developing bibliographies that are very comprehensive on practically every trade or occupation represented in these states.

The community also agrees to provide adequate funds to secure necessary instructional materials, such as reference books, textbooks, bulletins, pamphlets, trade journals, correspondence courses, charts, and magazines. A well equipped related subjects library is essential to insure that pertinent, practical, and current occupational practices may be taught in the two school periods per day which are devoted to technical and related study.

These funds, which are provided by the local school authorities, shall not be less than $10.00 per student-learner the first year the program is in operation. The second year $7.50 per student-learner is to be provided and thereafter $5.00 per student-learner. This fund is definitely set aside for instructional materials and not for equipment, and should be spent at the discretion of the coordinator, but with the approval of his principal.

The coordinator should be careful in his initial selection of books. So many are valuable in a number of fields that considerable discrimination must be shown to make the proper selection. As a general rule, select books that are recent. This is especially true in some mechanical fields where rapid changes are being made each year. The initial purchase of books should show a fairly wide distribution of subjects. Every trade or occupation the Industrial Co-op student-learners are engaged in must be represented at least once. The number of books purchased in any one field depends upon the number of student-learners working in that field. Even then, it is best not to secure a number of the same books. Secure books on the same field, but from different authors.

Related Instruction

At least one clock hour per day must be devoted to related instruction, and longer if there are student-learners enrolled under Plan B. This period is given by the instructor-coordinator and it is his responsibility to see that student-learners study related content that pertains directly to the job on which they are working. The period is conducted as a supervised study period with the coordinator giving such assistance to individual student-learners as he can. Obviously, the coordinator is not thoroughly grounded in all the occupations represented by student-learners in the Cooperative Training Program. He can, however, direct student-learners in their study, assist them in finding the information needed and in interpreting and clarifying material being studied.

Instruction, to be most worthwhile, should follow as soon as possible the job experience of the student-learner. The material should not only relate to the occupation or trade but should, so far as possible, relate to the actual job the student-learner has done the day before, the job he may still be on, or the job he will do after school that day. This is by no means an easy undertaking and the coordinator must stay alert and have his related period well organized for effective results to be secured.

Experience indicates that, although the related instruction period has been conducted satisfactorily in most cases, there is opportunity for improving it. Several important factors must be considered in setting up an effective plan for related study. The job student-learners worked on or will work on that day, getting student-learners to study without waiting for the coordinator to make an assignment, some method of checking student-learners to determine the knowledge they gained by the study and the cataloging of related material are among the more important matters that should be considered.

Types of Related Instruction

There are two types of related instruction which must be given in the related subjects class to insure a successful program of instruction. These are:

1. Specific related technical information, which is a part of each occupation, and usually peculiar to that occupation. This generally consists of the why, how, and wherefore, which all intelligent workers must possess if they wish to succeed and advance in their life's work. Approximately 80 percent of the class time should be devoted to specific related technical instruction. In the main, this type of instruction is the most complicated and difficult part of the entire program.

2. General related information is knowledge all persons going to work in all occupations must have if they are to reach any ultimate goal of success. General related information covers such topics as personal grooming, how to apply for a job, elements of leadership, social manners, personality development, and the like. This should consume the remaining approximate 20 percent of the total class time.

Importance of Individual Instruction

The requirements of the various trades and occupations in the Industrial Cooperative Training Program are different. Likewise, the student-learners will differ considerably both in the rate and extent of learning ability. Furthermore, learning, in the final analysis, is an individual process and an individual achievement. In view of these factors, it simply is futile to attempt to teach a class of student-learners in a dozen or more occupations at the same time by the group method. To be effective, instruction in Industrial Cooperative Training must be individualized and the responsibility for learning placed squarely upon the student-learner himself.

This means that the coordinator must have in his classroom an adequate supply of well-selected instructional materials on each occupation represented in his program and have them so organized and arranged that it will enable him actually to relate the work of the school with that done by each student-learner on the job. Although a difficult task, this must be done if the program is to fulfill the purpose for which it is designed.

Many excellent instructional materials are available in practically every trade and occupation. Much of this material may be secured for the asking from the manufacturers and distributors of tools, machines, and other products. Some of the material may contain much advertising, but the material still can be used to advantage for instructional purposes. In addition to this, the coordinator should secure several good books on each trade in his program. Ordinarily, it will not be necessary to have more than one or two copies of each book. When secured, these materials should be arranged alphabetically by occupations in the coordinator's room, always accessible to his students. To establish an Industrial Cooperative Training Program and then not provide ample instructional materials is like investing money in stock to be fattened and then neglecting to feed them.

Both industry and the school, as well as the home, must be concerned with the development of personal-social traits, for those are powerful 'success factors' in both civic and occupational life. It is not enough to have a list of such traits; they must be made 'objects of thought' or 'conscious objectives' from day to day in the classroom and on the job. The coordinator must be ever on the alert to discover and correct any undesirable habits and acquired traits of his students. This calls for skillful and sympathetic counsel.

Daily Class Procedure

It is imperative that each coordinator have a well outlined method of procedure for his student-learners. A copy of this procedure should be in each student-learner's file for daily reference. A simple daily outline is suggested below:

1. The student-learner secures his active file folder.

2. The student-learner completes any forms assigned daily. (Several forms are suggested in other chapters of this handbook.)

3. He continues work and study on an assignment started previously, or begins work on a new assignment which the coordinator makes for him on the basis of the needs as expressed by the report of work done on the job and the coordinator's contacts with the training agency representatives.

4. When a student-learner completes an assignment, he usually will have written work which must be checked by the coordinator. A very convenient manner in handling this material is to have on the coordinator's desk a double tray letter basket. One tray will receive the work completed by the student-learners; the other tray will receive work which the coordinator has graded and is ready for return to the student-learner.

Methods of Presenting Related Material

There are many methods of presenting related materials. The coordinator should use the method best suited to put over the problem at hand. Assignments in textbooks, trade journals, handbooks, and other sources of information, to be followed by written summaries, or oral reports, is an effective method.

Assignment Sheets

With each schedule of processes there should be prepared and issued a long series of assignment sheets which are based directly on the materials covered in the schedule of processes.

While the student-learner is working in a particular phase of his occupation, by referring to his schedule of processes he can easily locate the assignment sheets which deal specifically with the work he is learning each day on the job.

The coordinator should examine the daily work report of all student-learners, and combining the information secured there with the information obtained during his visits to the training agency, determine the assignments for his students. If specially prepared assignment sheets are not available, the coordinator should make assignment sheets, or other forms of assignments, which will assist the student-learner in his study of the problem or particular plan of his occupation.

It is important that every student-learner should have a definite assignment each day. Many times, one assignment will require two or three days, or sometimes a week or more, to complete.

Outside Speakers

At intervals it is an excellent idea for the coordinator, or a committee from the class, to invite well informed individuals in the community to come to the school and talk to the student-learners on particular subjects which are of interest and value to all. Such topics can be meaningful if the speaker is well informed, along with being respected in his field and his community.

The Conference Method of Presenting Information

One of the best methods of presenting information is through the conference method. A topic or case can figuratively be tossed among the student-learners and they discuss it from every angle that comes to their minds.

During the process of discussion, the coordinator should list on the chalk board each point that is brought out by the group. When the points are exhausted, the group should study the list on the board, eliminating the irrelevant ideas and consolidating the pertinent. In this manner the group arrives at a definite conclusion concerning the problem which was discussed.

The above are simply suggested ways of presenting related material. The coordinator should be in command of every tool available for the purpose for teaching and informing the student-learners concerning the job or occupation in which he is training.

Safety Instruction

It is required that safety instruction be given every Industrial Cooperative Student-Learner. Such instruction must be done on the job and as a part of the related study. Coordinators should work out with employers an outline of safety practices in each occupation represented in the program. From this outline the supervisor of the student-learner on the job can have an organized method of checking on the safety training and the coordinator can correlate the classroom training to the actual practices on the job. Everything possible should be done to make student-learners safety conscious in order that they might avoid injury and become reliable employees.

Plan for General Related Material

It is desirable for the coordinator to decide well in advance what items of general related material he intends for the individual student-learners to complete, and record these on a progress chart. (A notebook size progress chart is shown at the end of this chapter. A wall sized progress chart should be used in the classroom. These large progress charts can be secured from your regional supervisor.) As each task is completed, it can be so indicated by placing a grade or marking symbol opposite the student-learner's name and under the listing of the task or assignment.

The following is a list of suggested topics which the coordinator can include on the progress chart for study by the Co-op Class, individually, or as a group. Study of topics such as these constitutes general related instruction.

1. Technical Vocabulary
2. Safety
3. Employer-Employee Relations
4. Being on Time

5. Value of Planning
6. Dependability and Honesty
7. Organization Chart
8. Business Appearances
9. Personality
10. Thrift
11. Trade Literature
12. Social Security
13. Unemployment Compensation
14. How to Use the Phone
15. How to Study
16. Health
17. Social Etiquette
18. Checks and Receipts
19. Value of Order
20. Committee Assignments
21. Letter of Application
22. Vocabulary Testing
23. Spelling (Technical as well as General)
24. Reports for Paper
25. Oral Class Reports

PROGRESS CHART
AND
CONTENT ANALYSIS

DATE STARTED

COURSE
INSTRUCTOR
SCHOOL
CITY

INSTRUCTIONAL UNITS

NO	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1																																									
2																																									
3																																									
4																																									
5																																									
6																																									
7																																									
8																																									
9																																									
10																																									
11																																									
12																																									
13																																									
14																																									
15																																									
16																																									
17																																									
18																																									
19																																									
20																																									
21																																									
22																																									
23																																									
24																																									
25																																									
26																																									
27																																									
28																																									
29																																									
30																																									
31																																									

INFORMATION

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA BB CC DD EE FF GG HH II JJ KK LL MM NN OO PP QQ

VOCATIONAL EDUCATION

TENNESSEE

TRADE and INDUSTRIAL SERVICE

Chapter XII

SUPERVISING STUDENTS ON THE JOB

Immediately after the student-learners begin work, the coordinator is faced with the responsibility of making supervisory visits to determine how they are getting along. There is no designated time to make supervisory visits. Needless to say, the coordinator does not follow a schedule in making visits. It may be necessary to visit initial placements several times the first week or so. After matters seem to be going along well, visits may be made only once or twice a month. Of course, it must be remembered that the student-learners must make progress on the job according to the schedule of processes and it is necessary that this progress be checked from time to time. A good rule for the coordinator to follow is to visit trainees when they are to be changed from one job to another, or when he feels that a visit should be made.

The following steps should be of assistance to the coordinator in supervising student-learners on the job:

1. Preliminary steps to carry out the responsibility:

    a. Be familiar with the policies set up by the Office of Education and State Plan.

    b. Make plans for time of supervision in accordance with the interest of school, employer, coordinator, and student-learner.

    c. Determine the general nature of the supervision.

    d. Secure permission to visit training establishment in order to observe work of student-learners on jobs.

    e. Establish friendly relationships with as many members of the organization as possible.

    f. Determine the uses of the information to be secured through supervision.

    g. Prepare a memorandum of the points to be observed while visiting the training station.

2. Detailed steps to carry out the responsibility:

a. Construct written forms for recording data gathered through supervision.

   (1) Report from training agency.
   (2) Form used by coordinator.
   (3) Forms for permanent records.

b. Make arrangements with school administration for ample time for coordination and supervision of trainees on jobs.

c. Have a clear understanding with the student-learner of the plan and purpose of supervision.

d. Make a plan for supervision on the job.

e. Contact training agencies to make plans with the employer for supervisory visits.

f. Supervision of student-learner on the job:

   (1) Advantageous time.
   (2) Unobtrusive manner.
   (3) Take up minimum of time of trainee and of other employees.
   (4) Informality and naturalness desirable.
   (5) Discussion with manager and foreman only on invitation or appointment.
   (6) Observe activities of student-learner carefully.
   (7) Observe activities of entire organization.
   (8) Take advantage of all opportunities to further the advancement of the student-learner and program.

g. Summarize data secured through observation immediately following visit. (Never make written recordings during visit.)

h. Secure written report of student-learner's progress from training agency.

i. Record results on permanent record blanks.

j. Discussion with student-learner as to the results of the supervisory visit.

k. Possible adjustment of schedule of processes.

l. Possible adjustment of related instruction.

3. Special problems met and overcome in carrying out the steps:

   a. To see that the progression agreed upon is followed in the training agency.

   b. To fit the student-learner's work schedule to suit the needs of the employer.

   c. To see that the student-learner is under the supervision of the qualified workman while on the job.

   d. To determine whether or not the employer and personnel have a sincere interest in the training of student-learners.

   e. To see that adequate facilities are being provided.

   f. To see that the student-learner is not being exploited.

One thing that should be emphasized in visiting student-learners on the job is the necessity for the coordinator to be friendly with the other workers in the establishments. The coordinator should make it a policy to talk with other workers about the Co-op Program, greet them pleasantly when they are met in the shop or on the streets. Everything should be done to create and maintain a friendly and helpful attitude on the part of all the other workers. One word of caution. The coordinator must remember that the employer is interested in production. In speaking with the other employees while in the shop, the coordinator should never do anything that will interfere with the work in progress.

The coordinator should not depend on his memory as to what he observed in visiting student-learners. He should duplicate a form for the purpose of recording pertinent data secured on his visits. Under no condition should it be filled out in the training agency. After completion the form should be filed for reference as occasion demands. A suggested form for recording visits to training agencies is shown below.

Points Observed by Coordinator Visiting Trainee

Training Agency ______________________ Contact Official _____________

Trainee ____

Date _______________________ Time of Visit _____________________

Coordinator's Comments

1. Conditions surrounding the place of business _____________________

2. Hazardous conditions in the plant ______________________________

3. Attitude of workers toward coordinator and trainee ______________

4. Specific operations in which trainee is engaged ________________

____

5. Immediate related subject matter needed ______________________

6. Personal appearance of trainees ______________________________

7. Apparent interest of trainee in work ___________________________

8. Apparent interest of employer in trainee ________________________

Good common sense should be used by the coordinator in making supervisory visits. Do not visit an establishment at the peak of the work load. There is probably a right time to visit every establishment and the coordinator should learn it and make his scheduled visits accordingly. Likewise, he should not take up too much time talking with the trainee. It must be remembered that the trainee is an employed individual and his employer expects him to be working during the period he is being paid to work.

In making visits the coordinator should always see the employer first and, if at all possible, see him again on leaving the establishment. This is not only common courtesy, but the employer is due it and the coordinator should expect to do so. Everything possible must be done to make the employer and the other workers in the establishment feel that they are glad to be cooperating with the school in the Industrial Cooperative Training Program. Good public relations performed during supervisory visits leads to a larger and better Co-op Program in the future. In the first place, employers who are using Co-op student-learners are usually glad to cooperate every year; in the second place, other employers hear about it from satisfied employers and they, too, are willing to cooperate with the school.

A full-time coordinator may make part of his visits to employers in the morning when student-learners are not on the job. By visiting both mornings and afternoons, employers may be seen at least twice a month without too much difficulty. Student-learners, however, should be seen at work, so the coordinator should vary his visits.

Chapter XIII

GRADING AND PROMOTING STUDENT-LEARNERS

It is necessary to secure a grade on the Co-op student-learner's progress each grading period. The grade should be on both the related technical instruction and the job experience. Depending upon the policy of the school, the grades may be combined or kept separate. The following should be kept in mind concerning grading:

1. The coordinator should do the grading and promoting.

2. All evaluating, promotion, and grading pre-supposes that actual training is going on.

3. Evaluating, grading and promotion should take into consideration the work-habits, the attitudes, the skill and the standing in related subject matter of the student-learner.

4. Before the student-learner is promoted or graded, the coordinator should discuss the matter with the employer.

5. The employer should use a check card to score the student-learner's skill and progress. This card may be mailed to the employer prior to the grading period or handed him by the coordinator on one of his visits. In addition to the convenience to the employer, it tends to standardize the grading of all the employers. Always provide the employer with a return envelope, properly addressed and stamped.

6. So far as possible, the student-learner should be allowed to make progress as rapidly as his skill and ability permits.

7. If the student-learner has not shown sufficient skill or ability on a job upon completion of training hours required, he should be kept on that job until he shows necessary improvement.

To get a grade on the related technical instruction, the coordinator may give a test on the material covered. The grade for the work experience should be given by the employer. This may be done by checking a card provided by the school for that purpose.

The grading period provides an excellent opportunity for the coordinator to have individual conferences with his student-learners. In

EMPLOYER'S REPORT ON STUDENT-LEARNER

(Front of Card)

Date ______________________

Name ____________________________ Training Agency ___________________________

Check the column which, in your opinion, best describes the student-learner's progress in your firm.

	Very Good	Satisfactory	Unsatisfactory
Promptness			
Reliability			
Interest in Job			
Progress on Job			
Industrious			
Attendance			
Courtesy			
Loyalty			
Personal Appearance			

Note: Remarks on reverse side.

(Back of Card)

Remarks: ____

____

____

____

____

____

____

____

____

____.

Signed ____________________________________
Employer

all cases where the employer has rated the student-learner low on one or more points, the coordinator should immediately go over the matter with the student-learner. Student-learners who have been rated high by their employers should be commended. Conferences with the latter group are held to lead and encourage them, to discover their expanding interests, and to discuss their future plans.

Academic grades of Co-op Student-Learners should not be ignored at the grading period. The coordinator should check the grades of all his students in other school subjects. Those who have done well are commended. Those who fail a subject or whose grades show indifference toward study or application should be called in a conference. Such students must be impressed with the importance of other school subjects. It may be necessary to remove extremely poor students from the Co-op Program.

The coordinator will do well to discuss grades of Co-op students with teachers of other subjects they are taking. He does not have to wait on the grading period to do this, but should do it regularly during the school year. This is especially true with those students who have a tendency to make low grades. Teachers of other subjects will appreciate this and will be able to give the coordinator an idea of the attitude, interest and application of the Co-op students. By working together this way the student is helped and the tone of the program is improved.

The purpose of grading is not to fail a student-learner. Grades should be used to indicate to a student-learner his lack of progress or application. They should indicate his weakness or the things he failed to understand properly. Conferences with a student-learner should be sympathetic and designed to help him. One does not expect perfect grades in school subjects on the points on which employers rate Co-op students. Improvement, however, should always be expected. A student-learner who does not improve is not getting much out of the school or out of his work experience.

The employer's report on the student-learner is made a part of that student-learner's permanent file. Any notes made by the coordinator in discussing matters with the employer, other teachers, and in conference with the student-learner, should likewise be made a part of the permanent file.

Chapter XIV

REPORTS

Since the salary of the coordinator of an approved Industrial Cooperative Training Program is partially reimbursed from State and Federal funds, it is necessary that certain reports be submitted to the State Office as evidence that the program is in operation and is being conducted according to the State Plan. In order to properly fill out the monthly report, the coordinator must have a combination of accurate records that he keeps, along with those that the student-learner must keep. These forms are reproduced in this chapter, along with instructions to aid the coordinator in his reporting.

Student-Learner's Daily Wage-Hour Report

On the following page is a recommended form on which the student-learner can report his daily hours and wages. This form is to be reproduced by the coordinator. The writer has found it helpful in taking nine or ten of these forms and stapling them in a letter size file folder, labeled with the student-learner's name, so that the coordinator will not have to provide a filing system for a large number of single sheets. This system assures a composite file of these reports for each student-learner. These folders are placed in the file cabinet and at the beginning of each class period the student-learner secures his folder and fills in the appropriate blanks. At the end of each reporting period it is then a simple matter for the coordinator to take the file folders and secure the necessary information for his monthly report.

The Monthly Report - T & I Form 403

The monthly report form is placed in this chapter for reference. The form is to be made out in triplicate. The original copy is to be sent to the Regional Supervisor, signed by both the coordinator and his principal, by the fifth of the month following the month for which the report is made. The duplicate is for the coordinator's file, and the triplicate is for the principal.

Directions for completing the form:

1. School: Write here the name of the school in which the program is located.

2. City: Write here the name of the city in which the school is located. (Give post office address.)

STUDENT-LEARNER'S DAILY WAGE-HOUR REPORT

NAME____________________ TRAINING AGENCY____________________

REPORT FOR MONTH OF____________________ OCCUPATION____________________

DAY OF WEEK	DAY OF MONTH	HOURS WORKED SCHOOL DAYS	HOURS WORKED OTHER DAYS	PAY RECEIVED SCHOOL DAYS	PAY RECEIVED OTHER DAYS
	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				
TOTALS					

TOTAL HOURS WORKED THIS MONTH__________ TOTAL HOURS TO DATE__________

TOTAL WAGES EARNED THIS MONTH $__________ TOTAL WAGES TO DATE $__________

SAVINGS THIS MONTH $__________ SAVINGS TO DATE $__________

3. Date School Opened: Write here the date school opened in the fall. This same date appears on each month's report.

4. Time of Related Class: Record here the hours within which the related class meets each day.

5. No. S-L Occup: Trade ______ Office ______ Retail ______: In the appropriate blanks record the number of student-learners which are learning trades, office occupations, and retail jobs. The total of these three must equal the maximum number of student-learners enrolled during the month.

6. Min. Hrs. Rel. Class ____; Min. at Work ____; Max. ____: Record here (a) the minimum length of time your related class meets for each student-learner per day; (b) the minimum number of hours worked on a school day by that student-learner who works the fewest hours; (c) the maximum number of hours worked on a school day by that student-learner who works the greatest number of hours.

7. Min. Wage Per Hour ____; Max. ____: (a) Record the lowest hourly wage received by that student-learner who receives the lowest hourly wage. (b) Record the highest hourly wage received by that student-learner who receives the highest hourly wage.

8. No. S-L Certs. ____; No. Not Rec'd ____: (a) Record the number of "Applications for a Special Student-Learner's Certificate for Employment Training" which have been applied for; (b) Record the number of like certificates which have been applied for but not received from Washington.

9. Tng. Memos Appr.: Record here the number of training memoranda which have been signed by the State Director of Trade and Industrial Education or his representative. This number should be the same as the total enrollment for the year.

10. No. Talks Made: Record the number of talks the coordinator has made during the calendar month covered by the report. This means talks to civic clubs, Parent-Teacher Association meetings, school assemblies and similar groups.

Column A., Mtg. No.: Record the number of class meetings here. The first day of the school year will be "1." Continue the numbering consecutively throughout the school year. Do not start with "1" at the beginning of the second month, but number the beginning of the second month with the number next larger than that of the last day of the preceding month. At the end of the year the accumulated total should be from 176 to 180 meetings.

Column B, Meeting Date: Record the calendar date on which the class met.

Column C, Entered: Show number of male (M) and female (F) student-learners who entered the programs on the dates of their respective entrance. (List each on the reverse side of the report form.)

Column D, Dropped: Show number of student-learners (male and female) who dropped, and record same on calendar date of leaving. Give details on reverse side of the report form.

Column E, Enrollment: This refers to the number of student-learners enrolled in the program on that particular date. Student-learners dropped from the program, or entering it, will be reflected by decreasing or increasing totals of enrollment.

Column F, Atd. Rel. Class: The number in actual attendance in the related class on that date.

Column G, Atd. Job: The number in actual attendance on the job on that date.

Column H, Contacts: In "Routine" column shown the number of contacts made with employers, student-learners, and parents which were routine in the coordination of your established program. In "Promotional" column show the number of contacts made each day with employers or prospective employers, students, parents, or others, that were purely promotional in nature, and had for their purpose the explanation or expansion of the program.

Instructions on Uniform Method of Reporting Contacts

Definition of a Contact

Since it is desirable that all coordinators place the same interpretation upon the term "contact" when making out the monthly report for the State Office, the word needs to be defined. In the future the term "contact" may be considered to mean:

1. A personal call or visit that has been planned by the coordinator for a definite purpose, and one in which he was successful in actually talking with the individual or individuals personally, or

2. A call made at the request of one of the parties signing the training memorandum or his agent, or

3. A personal interview where the coordinator actually discussed the program with an individual who was thought to be able to assist in the operation of the program.

In order to facilitate a record of the contacts made, it may be assumed that there are two general phases of coordination which can be classified as scheduled routine contacts and promotional contacts. These are defined below:

A scheduled routine contact is a planned personal interview between the coordinator and one of more of the parties signing the training memorandum or his agent for the purpose of correlating the related instruction given by the school with the work experiences provided by the training agency, or for the purpose of discussing the general progress and problems of the student-learners.

A promotional contact is an interview between the coordinator and such parties as may be deemed influential in creating interest in or furthering the development of the program.

On the other hand a contact is not to be reported under the following situations or conditions:

1. When the call is made by telephone, letter, or any other means except as stated above.

2. When the coordinator meets the student-learner during the time the coordinator is scheduled to be at school.

3. When the coordinator makes a call but fails to get an interview with the person he intends to see.

4. When the coordinator makes a talk to a group or assembly. Promotional contacts may result from talks, but the talk itself is not a contact.

Criteria for Determining Number of Routine Contacts

1. When only the employer is seen on a coordination visit, one contact shall be reported.

2. When a student-learner and employer are contacted on the same coordination visit, one contact may be reported for the employer and one contact for the student-learner.

3. When one or more student-learners in the same department are contacted on a single visit, one contact shall be reported for each student-learner interviewed.

4. When one or more persons representing a training agency, such as the owner, shop foreman, superintendent, or department head, are contacted on one trip, only one contact shall be reported except as provided for in the situation as covered in paragraph 5 below.

5. When a training agency has student-learners in more than one department, the number of department heads actually contacted shall determine the number of contacts reported.

Situations may arise in which a routine and promotional contact may be made on the same trip. For example, a coordinator, in making a routine contact, may learn that there is an opportunity to place another student-learner in the same training agency. If this information is followed up with the proper officials, a promotional contact has been made and may be reported as such.

Item I, Hrs. Worked School Days: (Taken from wage-hour folders) Record the total hours worked by all student-learners on the school days of the year. Add this figure in for total for year.

Item J, Hrs. Worked Other Days: (Taken from wage-hour folders) Record the total hours worked by all student-learners on Saturdays, Sundays, and holidays falling within the calendar month being reported. Add this figure in for total for year.

Item K, Pay Received School Days: (Taken from wage-hour folders) Show the total amount of money earned by all student-learners on school days for the month. Space for accumulated total for year is provided.

Item L, Pay Received Other Days: (Taken from wage-hour folders) Show total earnings of all student-learners on Saturdays, Sundays, and holidays, for the month being reported. Here, also, space is provided for the total for the year.

Item M, Totals: Show total amount earned by all student-learners for the month and the year by adding Items K and L.

Item N, Average Enrollment: Total of Column E divided by number of days class met for the month.

Item O, Average Attendance: In School; Total of Column F divided by number of days class met for the month. On Job; Total of Column G divided by number of days class met for the month.

Item P, Per Cent of Attendance: In School; Total Column F divided by Total of Column E. On Job; Total of Column G divided by Total of Column E.

Item Q, Amount Set Aside As Savings: Record here the total amount of money the entire class (see wage-hour folders) has put into savings within the month. Count as savings money paid for bonds, that put into savings accounts, premiums paid on insurance policies (if paid by the student-learner), and any other form of legitimate savings plans.

Reverse of Form

Entries This Month: Write the name of all entries, together with their age, whether a junior or senior, the occupation being learned, hours scheduled to be worked each week on school days and on other days, and the wage to be paid per hour.

Drops This Month: Record the name of any student-learner who drops from the program, the date dropped, and the reason for dropping.

T&I Form 403
Revised 1/49—5000

STATE DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
Nashville, Tennessee

Diversified Occupations Program Calendar Month of ______________________, 19____

MONTHLY REPORT

1. School ______________________ 2. City ______________________

3. Date School Opened ______________________ 4. Time of Related Class ______________________

5. No. S L Occup.: Trade________ Office________ Retail________ 6. Min. Hrs. Rel. Class________ Min. at Work________ Max________

7. Min. Wage Per Hour________________ Max________ 8. No. S-L Certs________________ No. Not Rec'd________

9. Trg. Memos Appr.______________________ 10. No. Talks Made______________________

(A) Mtg. No.	(B) Meeting Date	(C) Entered		(D) Dropped		(E) Enrollment		(F) Atd. Rel. Class		(G) Atd. Job		(H) Contacts	
		M	F	M	F	M	F	M	F	M	F	Rout.	Prom'l
Sub totals													
Totals													

	Total for Mo.	Total for Year
I. Hrs. Worked School Days		
J. Hrs. Worked Other Days		
K. Pay Received School Days		
L. Pay Received Other Days		
M. Totals		

	In School	On Job
N. Average Enrollment		XXXX XXXX
O. Average Attendance		
P. Per Cent of Attendance		
Q. Amount Set Aside As Savings	$	

Forward original to your District Supervisor immediately after close of each calendar month. The fifth is the deadline. Make copies for your file and your Principal and/or Superintendent.

I certify the above report of my Program to be correct.

____
D. O. Coordinator

(FILL IN THE BACK)

____
Principal

ENTRIES THIS MONTH

NAME	AGE	JR. SR.	OCCUPATION BEING LEARNED	HOURS ON JOB		WAGES PER HOUR
				SCHOOL DAYS	OTHERS	

DROPS THIS MONTH

STUDENT-LEARNER	DATE DROPPED	REASON FOR DROPPING

T & I Form - ICT - DS

This form is the Industrial Cooperative Training Student-Learner's Related Schedule. It is filed only twice per year, on September 15th and February 1st. On the reverse side of the form detailed instructions are provided for the proper execution of this form.

The form, when properly filled out, should be signed by both the coordinator and the principal, with the original and 1st carbon then mailed to your Regional Supervisor.

T&I Form-ICT-DS
August 1954

STATE OF TENNESSEE - DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION - NASHVILLE 3

Submitted________________19____

Sheet_____ of_____

School________________

________________Coordinator

THE DAILY SCHEDULE OF EACH STUDENT-LEARNER ENROLLED IN INDUSTRIAL COOPERATIVE TRAINING PROGRAMS

1	2	3		4	5				6								7		8	9	10	11
STUDENT-LEARNER'S NAME	Age	Sex		School Rank	Semesters in Coop. Train.				SCHOOL PERIOD SCHEDULE (Give time)								Time Schedule on Job School Days		Total Weekly Hours Emp.	Total Weekly Hours in School	OCCUPATION For Which Training	Occ. Code
		M	F		1	2	3	4	0	1	2	3	4	5	6	7	Start	Stop				
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
19																						
20																						
21																						
22																						
23																						
24																						
25																						

This form replaces T&I Form DO-S, 2/54.

STATE DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
TRADE AND INDUSTRIAL EDUCATION SERVICE
NASHVILLE 3

INDUSTRIAL COOP TRAINING STUDENT LEARNER'S RELATED SCHEDULE

To be filled in by each Industrial Coop Training Coordinator in quintuplicate. Send the original and first carbon to your District Supervisor of T & I office on September 15th and February 1st of each year. The other carbons are for your local director principal superintendent and your file. Follow these directions in making out the form

In the heading Columns 0 through 7 fill in the exact time each school class period begins and closes.

Col. 1	Give each student learner's name last name first in alphabetical order.
Col. 2	Age at beginning of current school term.
Col. 4	Is he a junior or senior high school student.
Col. 5	Is the student learner beginning his 1 2, 3 or 4 semester of Coop Training - check.
Col. 6	Give the amount of time the student learner spends in a. related study during the respective periods. b. show lunch time. c. mark 'at work' the school periods he is away from school and MTWTF to *designate* the days he works.
Col. 7	Give the exact time the student learner is scheduled to report for work on school days and the time he quits.
Col. 8	How many hours per week is he actually employed?
Col. 9	How many hours per week is he actually in school? (This must equal or exceed the figure in Col. 8.)
Col. 10 & 11.	Give the trade or industrial occupational title (Memo No. 104, 8/16/54) and number for which he is training. In case you have a title not listed send description schedule of processes dictionary of occupation number and title - and other details to State Office for approval.

In case you have a non-reimbursed Coop group of student-learners use this form and report their schedule, except use the dictionary of occupation number and title in Columns 10 & 11.

Chapter XV

EVALUATION OF THE PROGRAM

Purpose and Use of the Evaluative Criteria

On the following pages are listed a series of statements. Each statement indicates a condition or provision essential (or at least desirable) for a functioning Industrial Cooperative Training Program.

Evaluate each statement on the basis of personal observation and judgment and also all other available evidence, using a five-point rating scale as follows: (Note: The figures are to be used merely as convenient symbols, not as mathematical quantities.)

5. Provision or condition is present and functioning almost perfectly.
4. Provision or condition is present and functioning very well.
3. Provision or condition is present and functioning fairly well.
2. Provision or condition is present and in an inadequate amount or, if present, is functioning poorly.
1. Provision or condition is very poorly met or not present at all.

The Evaluative Criteria may be used by the coordinator to rate his own program. It is expected that others interested will use these criteria to measure the efficiency of the program.

I. AGREEMENTS:

( ) A. Are properly filled out and signed by the required persons.

( ) B. Are dated.

( ) C. Are properly understood by all parties concerned.

( ) D. Are up-to-date in their requirements.

( ) E. Have a schedule of processes attached.

( ) F. Provide for a minimum of 1-1/2 clock hours of related study.

( ) G. Include approved wage scale.

( ) H. Are provided for all involved parties.

( ) I. Clearly state work hour requirements.

( ) J. Conform with local, state, and federal labor and employment laws.

( ) K. Clearly state occupation or trade to be learned.

( ) L. Specify that high school credit will be granted.

( ) M. Provide for on-the-job supervision of the student-learner.

( ) N. Clearly state the status of the student-learner.

II. SCHEDULE OF PROCESSES:

( ) A. Are based on the skeleton analysis of the occupation.

( ) B. Have been developed and/or approved by an occupational or craft advisory committee.

( ) C. Have adequate provision for keeping progress records.

( ) D. Provide proper type of work experiences and are designed to cover training period.

III. OCCUPATIONS INCLUDED IN THE PROGRAM:

( ) A. Conform with T & I Memo OT-104c, Revised 8-15-63. (See copy of Memo at end of this chapter.)

( ) B. Shall be those which offer real chances for training and advancement.

( ) C. Provide opportunity for employment after training.

( ) D. Are socially desirable.

( ) E. Meet the ethical and social standards of the community.

IV. TRAINING AGENCIES:

( ) A. Have adequate equipment and facilities to afford an all-round training program.

( ) B. Including employees, understand the objectives of the program.

( ) C. Are within a reasonable distance from the high school.

( ) D. Designate a particular qualified person to train the student-learner.

( ) E. Have satisfactory business and ethical standing.

( ) F. Comply with all safety and health regulations.

( ) G. Anticipate retaining the students after graduation.

( ) H. Do a sufficient volume of business to enable students to receive reasonably continuous training.

V. RELATED INSTRUCTION:

( ) A. Material and equipment are organized to permit efficient student use.

( ) B. Schedule has been developed with the aid of a craft committee and is based upon the schedule of processes.

( ) C. Is kept up-to-date.

( ) D. Material is sufficient.

( ) E. Is organized on the student-learner level and is in keeping with the training period.

( ) F. Is correlated with work experience.

( ) G. Includes general related subjects which are applicable and satisfactorily taught.

( ) H. Schedules are planned to produce best "student efforts."

VI. STUDENT SELECTION:

( ) A. Made out on the basis of the following:

    ( ) 1. Entrance age requirements.

    ( ) 2. Job requirements.

( ) 3. Pupil interest and known abilities.

( ) 4. School record to date.

( ) B. Program provides adequate advice and counsel concerning the occupation.

( ) C. Made with assistance of advisory committee and parents.

( ) D. Program provides that the coordinator shall check the prospective pupil for "sincerity of purpose."

( ) E. Program is well planned and organized.

VII. COORDINATOR:

( ) A. Visits training agencies on basis of needs and purposes.

( ) B. Visits training agencies frequently enough to maintain normal relationship.

( ) C. Possesses training experience and personal qualifications to enable him to perform his duties effectively and efficiently.

( ) D. Maintains contact with the parents.

( ) E. Maintains acceptable civic and social relationship in the community.

( ) F. Has frequent meetings with the advisory committees.

( ) G. Conducts the program as an integral part of the school system.

( ) H. Maintains cooperative relationship with the school.

( ) I. Keeps accurate check on student job progression.

( ) J. Has sufficient follow-up and permanent record system.

VIII. PUBLIC'S ATTITUDE:

( ) A. Organized labor in the community approves the program.

( ) B. Civic organizations are in sympathy with the program.

( ) C. School officials, principal, and teachers endorse the program.

( ) D. Industry as a whole cooperates with the program.

( ) E. Newspapers are disposed to give favorable publicity.

( ) F. School patrons understand clearly the objectives of the program.

IX. ADVISORY COMMITTEE:

( ) A. Participates in the operation of the program to a satisfactory degree.

( ) B. Is proportionately representative (School, Employer, Labor).

X. MISCELLANEOUS:

( ) A. Provision has been made to permit graduation from high school in the usual four year period.

( ) B. School administration provides adequate funds to purchase the necessary equipment and instructional material.

( ) Sum Total of All Ratings

Scores of 275 and above indicate Superior program
Scores between 210 and 275 indicate Average program
Scores below 210 indicate Below Average program

T&I MEMO OT-104c
Revised 8-15-63
150

August 15, 1963

STATE OF TENNESSEE
DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
117 CORDELL HULL BUILDING

Destroy Previous Issues

TO: All Trade and Industrial Education Leaders in Tennessee

FROM: F. A. Van Eynde, Acting Director, Trade and Industrial Education

SUBJECT: OCCUPATIONAL TITLES FOR REPORTING TRADE AND INDUSTRIAL CLASSES AND PROGRAMS.

The attached list of Occupational Titles supersedes all other coding and classifying lists of occupations for which training may be offered in the Trade and Industrial Education Program. All classes for which reimbursement is expected are to be reported to the State Office under one of these eighty-eight (88) occupational title areas, unless prior approval is granted. These new codings are in accordance with OE-84029 CODED OCCUPATIONAL TITLES IN TRADE AND INDUSTRIAL EDUCATION.

The procedure for securing prior approval on other occupations is to submit title and code (according to Second Edition of DICTIONARY OF OCCUPATIONAL TITLES) of the occupation for which you propose to train. A complete description of the occupation should also be submitted.

If you have other occupations for which you feel training is justified, send in a description for classification. While it is recognized that Day Trade Programs may be conducted for any trade and industrial group, it should be noted that not all trade and industrial occupations, for obvious reasons, lend themselves to a Day Trade type of program. Training for many trade and industrial occupations can best be done through the Industrial Part-Time Co-Operative Program, and/or through Evening Trade Extension classes. The Evening Trade Extension class has the broadest application, since workers in all trade and industrial occupations may be served through this type of class.

All Industrial Coop. Training Student-Learners must be employed in an occupation having a recognized learning period of at least two years and one which may be classified under one of these eighty-one (81) occupational titles for which such training may be given.

Considerable effort has been made to assist the local Industrial Coop. Coordinators in including herein more adequate industrial type training opportunities. This revised Occupational Title listing has been keyed* to indicate which occupations are considered HAZARDOUS. Training Agreements for those engaged in "Prohibited Occupations for Children Under Eighteen" must be approved before the student-learner can be considered legally employed.

PLEASE DESTROY ALL OTHER COPIES OF OCCUPATIONAL TITLES YOU MAY HAVE ON HAND

T&I - OT #401c
Revised 8-1-63
150

OCCUPATIONAL TITLES FOR REPORTING TRADE AND INDUSTRIAL EDUCATION CLASSES AND PROGRAMS

TITLE	CODE
Air Conditioning & Refrigeration*	5-83.941
Artist, Commercial	0-44
Auto, Body*	5-81.510
Auto, Mechanic*	5-81.010
Baker	4-01
Bakery Products, NEC	4-02
Barber	2-32.01
Boilermakers**	4-83
Bookbinder	4-49.010
Brick Masons	5-24
Cabinet Makers*	4-32
Candy Making & (Confectioner)	4-05
Carpenters*	5-25
Cement Finishers	5-26
Chem. Mfg. Operators**	4-52
Cleaning & Pressing & Laundry*	5-57
Cooks, Commercial	2-26
Cosmetologist**	2-32.15
Custodian (or Janitor)	2-84
Dairy Products Processing	4-06
Dental Assistant	1-32.10
Doctor's Assistant	1-32.20
Draftsman	0-48
Dressmaker	4-25
Electric Motor Repairman*	5-83.433
Electrician, Lineman**	5-53
Electricians, Maintenance & Repair*	4-97.420
Electricians, NEC*	4-97
Electricians, Wiremen*	4-97.010
Firemen, Fire Department**	2-63
Floral Designer	0-43.60
Floor Layer (Floor Coverer)	5-32.752
Foremen & Supervisors**	5-99
Gas Engine Repairman	5-83.652

---

* May be included in bona fide Ind. Coop. Training Classes but have been declared hazardous.

** May not be included in Industrial Cooperative Training Classes.

Gunsmith	5-83.542
Housekeeper, Hotel & Hospital	2-25.21
Ice Cream Maker	6-06.180
Instrument Mechanic	5-83.971
Interior Decorator	0-43.40
Janitor	2-84
Jeweler	4-71
Machine Operator (Machine Shop)*	6-78
Machinist*	4-75
Maids & Housemen - Hotels, Restaurants, etc.	2-24
Maintenance Mech. & Repairmen*	5-83.621
Manufacturing (Electronics only)	4-98
Masseur	0-52.41
Meat Cutters*	5-58
Mechanic-Farm Machinery*	3-35
Nurse Aide	2-42
Nurse, Practical**	2-38
Office Machine Repairman	5-83.111
Opticians and Lens Grinders & Polishers	5-08
Painters, Const. & Maintenance*	5-27
Photographer, Commercial	0-56
Piano & Organ Tuners	5-12
Plasterers	5-29
Plumbers, Steam Fitters	5-30
Printing, Compositions & Typesetters*	4-44
Printing, Pressmen & Plate Printers*	4-48
Projectionist	5-55
Radio Manufacturing & (TV)*	4-98
Radio Operator	0-61
Radio & TV Serviceman	5-83.411
Roofers & Slaters*	7-31
Rubber Stamp Maker	6-57.931
Sheet Metal Workers*	4-80
Shoe Repairman	4-60
Sign Painters	5-27.910
Structural Metal Workers (& Ornamental)*	4-84
Tailors, Garment Workers	4-26
Tool Makers*	4-76
Upholsterer (Auto Body & Trim)	4-35.610
Upholsterer (Furniture)	4-35.710
Vetinary Hospital Attendant	2-42.60

Waiters & Waitresses	2-27
Water Treatment & Sewage Plant Workers	9-54
Welders, Acetylene*	4-85.030
Welders, Arc*	4-85.020
Welders, Combination*	4-85.040
Welders, Inert Gas*	4-85.025
Woodworking*	4-33

TECHNICIANS:

Chemical Lab.	0-05.22
Dental	0-50.06
Draftsman NEC	0-48
Electrical	0-17.01
Electronic	5-83.444
Medical Lab. Asst.	0-50.01
X-Ray Tech.	0-50.04

Chapter XVI

THE ASSOCIATED T & I CLUBS OF TENNESSEE

It is felt that this handbook could not be considered complete if mention of the student organization known as the Associated T & I Clubs of Tennessee was not made. The coordinator should seriously consider, and is certainly encouraged, establishing a chapter of the T & I Club with his Industrial Cooperative students.

As a point of information, one paragraph from Section A of the T & I Club Handbook is quoted, and all of Section D. The coordinator can contact his Regional Supervisor for a complete copy of the Handbook. After the quote of these two sections, one activity is suggested to be sponsored by the students enrolled in the Co-op Program.

Section A - The Organization

The Associated T & I Clubs of Tennessee is a student organization of clubs, or units, located in all sections of the State, and may be found wherever a vocational trade and industrial all day trade shop or industrial cooperative training program is located.

Section D - Purposes and Objectives of the T & I Club

1. To create and nurture a respect for all honest labor and an appreciation for workmanship and workers.
2. To unite in a common bond all white persons enrolled in All Day Trade Preparatory and/or Part-time Industrial Cooperative Training Programs approved by the State Board for Vocational Education, Trade and Industrial Service.
3. To foster a wholesome understanding of the functions of both labor and capital and a recognition of their mutual interdependence.
4. To encourage its members to prepare for leadership and to develop self-confidence.
5. To assist its members to make advantageous choices of occupations and locations.
6. To promote high standards of both scholarship and workmanship, and to encourage the cultivation of a thirst for knowledge.

7. To encourage its members to practice thrift.

8. To encourage its members to practice sound business principles and ethics.

9. To serve as an agency for wholesome social and recreational activities on the part of its members.

10. To promote in the community a favorable attitude toward publicly supported vocational education in all worthy occupational fields.

11. To assist its members to formulate a desirable and satisfying philosophy of life.

12. To afford an opportunity for developing a continued, growing loyalty to the principles of representative government and a wholesome respect for democratic ideals.

Benefits to be derived: By adhering to the purposes and objectives listed above, the T & I Club members can expect to derive certain benefits from their participation in the club program. By participating in the program, club members will:

1. Be affiliated with a club that has state-wide status, and standing.

2. Be eligible to compete with other students in the various contests conducted by the club on a local, regional and state-wide basis.

3. Have an opportunity to bring favorable publicity and recognition to his school and to himself by being among the winners of the regional and state contests.

4. Have chance to develop leadership abilities through participation in meetings and in planning for various school and recreational events, such as carnivals, minstrels, picnics, and similar functions.

5. Get training and experience in presiding at and participating in group meetings.

6. Have an opportunity to get experience in expressing himself in public.

7. Get experience in working with committees and serving on them.

8. Have an opportunity to show initiative as well as the degree to which they will assume responsibility.

9. Be eligible to participate in the social and recreational aspects of the club program.

10. Get a broader viewpoint and more thorough understanding of Vocational Education.

11. Have the privilege of attending the Annual Convention.

12. Receive the various issues of the Tennessee T & I News, which is the official club paper.

13. Have an opportunity to write feature stories, articles, and news items which may be published in the T & I News.

14. Have the privilege of attending and participating in the annual summer camp program.

Employer - Employee Banquet

One activity should be conducted by every Industrial Cooperative Training Program. This can be done as a T & I Club activity, or if a club chapter is not organized, it should be a class undertaking. This is the annual Employer-Employee Banquet.

This activity is a banquet given by the students enrolled in the Industrial Cooperative Training Program, with the various Employers and their wives being the guests. This is considered an ideal way by many of expressing to the employers your appreciation for their support to your program. Any student enrolled in a Co-op Program earns enough as he learns to financially support his part of such a function. It has definitely been proven that the employers are very grateful for this attitude on the part of the students in a Co-op Program.

Many coordinators across the state have had very successful banquets. Any new coordinator can secure advice from his Regional Supervisor and from his fellow coordinators.

VT 001 010

Placement of Graduates from Trade and Industrial Programs in Massachusetts State-Aided Vocational Schools, Class of 1962.

Massachusetts State Dept. of Educ, Boston. Div of Vocat Ed
Pub-271
Pub Date - 1Mar63
MF AVAILABLE IN VT-ERIC SET. 36p.

*GRADUATE SURVEYS, *GRADUATES, *VOCATIONAL FOLLOWUP, *VOCATIONAL SCHOOLS, *TRADE AND INDUSTRIAL EDUCATION, HEALTH OCCUPATIONS EDUCATION, COOPERATIVE EDUCATION, JOB PLACEMENT, WAGES, Massachusetts,

The report was compiled from statistics submitted by directors of 92 local schools offering 348 vocational courses. Of 3,315 graduates, (1) 137 continued training in full-time school, (2) 445 entered the armed services, (3) 2,733 were available for employment, (4) 2,420 or 89 percent were employed in the trade trained for or in a related field, (5) 256 were employed in an occupation not related to trade trained for, (6) $1.50 was the median hourly wage, (7) 37 were unemployed, and (8) 20 were unaccounted for. Tables showing total graduate placement and placement by both schools and trades for all-day trade and industrial, part-time cooperative, practical nursing, and area vocational schools. (MM)

VT 001 010

1010

ED022065

COMMONWEALTH OF MASSACHUSETTS
Department of Education

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

PLACEMENT OF GRADUATES
From
TRADE AND INDUSTRIAL PROGRAMS
in
MASSACHUSETTS STATE-AIDED VOCATIONAL SCHOOLS
Class of 1962

This report is compiled from statistics
submitted by Directors of local schools.

March 1, 1963

MASSACHUSETTS EDUCATION STUDY
43 LEON STREET
BOSTON, MASS.

Division of Vocational Education
Walter J. Markham, *Director*
John F. Shea, *Assistant Director*

Owen B. Kiernan
Commissioner of Education

Publication Number 271 approved by Alfred C. Holland, State Purchasing Agent.

VT 01010

TABLE I

SUMMARY BY TYPE OF SCHOOL

Report of Graduate Placement Class of 1961-62

			Not available for employment			Employed in trade for which trained or in occupation related to trade					
Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Continued Training in Full Time School (3)	Entered Armed Service (4)	Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Number (6)	Per Cent (Col. 6 ÷ 5) (7)	Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
ALL SCHOOLS	348	3315	137	445	2733	2420	.89	1.50	256	37	20
ALL-DAY TRADE AND INDUSTRIAL (BOYS)	243	2001	109	327	1565	1298	.83	1.50	232	23	12
ALL-DAY TRADE AND INDUSTRIAL (GIRLS)	15	293	9	4	280	256	.92	1.25	14	7	3
PART-TIME COOPERATIVE (BOYS)	62	554	1	99	454	452	.99	1.60	2	-	-
PRACTICAL NURSING	12	302	7	3	292	278	.95	1.50	3	7	4
AREA VOCATIONAL	16	165	11	12	142	136	.96	1.75	5	-	1

Massachusetts Summary of Earnings:

Boys	-	$6,049,056.00
Girls	-	1,388,400.00
Total	-	$7,437,456.00

TABLE II

ALL-DAY TRADE SCHOOLS (BOYS)

Report of Graduate Placements by Schools
Class of 1961-62

Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Not available for employment		Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Employed in trade for which trained or in occupation related to trade		Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
			Continued Training in Full Time School (3)	Entered Armed Service (4)		Number (6)	Per cent (Col. 6 ÷ 5) (7)				
ALL SCHOOLS	243	2001	109	327	1565	1298	.83	1.50	232	23	12
ABINGTON Mechanics (Automotive)	1	6	-	3	3	2	.67	1.25	1	-	-
APPONEQUET REGIONAL	2	14	3	2	9	9	100	1.60	-	-	-
Machinists		8	2	1	5	5	100	1.60	-	-	-
Mechanics (Automotive)		6	1	1	4	4	100	1.50	-	-	-
ARLINGTON	2	14	2	2	10	10	100	1.80	-	-	-
Machinists		7	-	1	6	6	100	1.80	-	-	-
Mechanics (Automotive)		7	2	1	4	4	100	1.45	-	-	-
ATTLEBORO	2	9	-	2	7	4	.57	1.50	3	-	-
Machinists		4	-	-	4	3	.75	1.50	1	-	-
Mechanics (Automotive)		5	-	2	3	1	.33	1.30	2	-	-
AVON Carpenters	1	7	-	-	7	6	.86	1.25	1	-	-
BARNSTABLE	5	27	-	3	24	15	.63	1.63	9	-	-
Carpenters		7	-	1	6	4	.67	2.00	2	-	-
Mechanics (Automotive)		7	-	1	6	4	.67	1.63	2	-	-
Plumbers		6	-	-	6	2	.33	--	4	-	-
Ship Builders		3	-	1	2	2	100	--	-	-	-
Technicians (Electrical)		4	-	-	4	3	.75	1.55	1	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BELMONT	5	18	1	3	14	13	.93	1.60	1	-	-
Carpenters		3	-	1	2	2	100	1.50	-	-	-
Machinists		4	1	-	3	3	100	1.75	-	-	-
Mechanics (Automotive)		3	-	-	3	2	.67	1.50	1	-	-
Sheet Metal Workers		3	-	1	2	2	100	1.65	-	-	-
Technicians (Electrical)		5	-	1	4	4	100	1.60	-	-	-
BEVERLY	7	37	2	5	30	30	100	1.50	-	-	-
Cabinetmakers		2	-	1	1	1	100	1.50	-	-	-
Carpenters		5	-	-	5	5	100	1.80	-	-	-
Machinists		3	1	2	-	-	-	--	-	-	-
Mechanics (Automotive)		6	1	-	5	5	100	1.35	-	-	-
Patternmakers		2	-	-	2	2	100	1.40	-	-	-
Printers		13	-	2	11	11	100	1.50	-	-	-
Sheet Metal Workers		6	-	-	6	6	100	1.50	-	-	-
BOSTON	14	200	10	37	153	105	.69	1.50	38	2	8
Bakers		11	1	4	6	4	.67	1.50	2	-	-
Cabinetmakers		23	2	3	18	12	.69	1.50	5	-	1
Carpenters		13	-	1	12	12	100	1.75	-	-	-
Draftsmen		12	1	4	7	3	.43	1.35	4	-	-
Machinists		16	-	2	14	11	.80	1.65	1	-	2
Mechanics (Airplane)		13	1	5	7	-	-	--	7	-	-
(Automotive)		17	1	4	12	6	.50	1.50	3	1	2
Painters		7	-	2	5	1	.20	1.50	3	1	-
Plumbers		18	-	2	16	14	.88	1.50	2	-	-
Printers		23	-	3	20	11	.55	1.70	7	-	2
Sheet Metal Workers		8	1	1	6	5	.83	1.70	1	-	-
Technicians (Electrical)		9	2	-	7	7	100	1.50	-	-	-
(Electronics)		17	1	5	11	8	.73	1.60	2	-	1
Welders		13	-	1	12	11	.92	1.70	1	-	-
BROCKTON	2	16	-	4	12	12	100	1.70	-	-	-
Cabinetmakers		7	-	2	5	5	100	1.60	-	-	-
Machinists		9	-	2	7	7	100	1.70	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CHICOPEE	8	36	3	12	21	17	.81	1.35	3	1	-
Cabinetmakers		6	-	3	3	3	100	1.25	-	-	-
Draftsmen		3	1	-	2	1	.50	1.35	-	1	-
Machinists		8	-	5	3	3	100	1.44	-	-	-
Mechanics (Automotive)		5	-	-	5	4	.80	1.10	1	-	-
(Auto, Body, Fender)		1	-	-	1	1	100	1.25	-	-	-
Needle Trades (Power Stitching)		3	1	-	2	1	.50	1.10	1	-	-
Technicians (Electrical)		6	-	3	3	3	100	1.35	-	-	-
Welders		4	1	1	2	1	.50	1.50	1	-	-
DIGHTON-REHOBOTH REGIONAL	2	14	-	3	11	10	.91	1.40	1	-	-
Carpenters		7	-	-	7	6	.86	1.40	1	-	-
Mechanics (Automotive)		7	-	3	4	4	100	1.75	-	-	-
EVERETT	9	50	2	-	48	44	.92	1.65	4	-	-
Cabinetmakers		9	-	-	9	8	.89	2.00	1	-	-
Machinists		13	-	-	13	13	100	1.65	-	-	-
Mechanics (Automotive)		5	-	-	5	5	100	1.50	-	-	-
Painters		1	-	-	1	1	100	1.75	-	-	-
Printers		10	-	-	10	9	.90	1.40	1	-	-
Sheet Metal Workers		2	-	-	2	2	100	1.25	-	-	-
Technicians (Electrical)		4	2	-	2	2	100	1.25	-	-	-
(Electronics)		4	-	-	4	4	100	1.65	-	-	-
Upholsterers		2	-	-	2	-	-	--	2	-	-
FALL RIVER	5	56	1	13	42	33	.80	1.40	7	2	-
Cabinetmakers		4	-	1	3	2	.67	1.50	1	-	-
Machinists		15	1	2	12	12	100	1.52	-	-	-
Mechanics (Automotive)		13	-	4	9	6	.67	1.25	3	-	-
Painters		3	-	2	1	1	100	1.25	-	-	-
Technicians (Electrical)		21	-	4	17	12	.71	1.40	3	2	-
FITCHBURG	4	16	2	2	12	5	.42	1.50	6	1	-
Carpenters		5	-	1	4	1	.25	1.50	2	1	-
Machinists		4	-	-	4	3	.75	1.67	1	-	-
Mechanics (Automotive)		3	-	-	3	1	.33	1.45	2	-	-
Technicians (Electrical)		4	2	1	1	-	-	--	1	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
FRAMINGHAM	3	25	-	-	25	25	100	1.60	-	-	-
Machinists		9	-	-	9	9	100	1.65	-	-	-
Mechanics (Automotive)		7	-	-	7	7	100	1.60	-	-	-
Technicians (Electronics)		9	-	-	9	9	100	1.55	-	-	-
GLOUCESTER	5	33	3	5	25	20	.80	1.45	5	-	-
Carpenters		6	-	1	5	5	100	1.60	-	-	-
Machinists		6	1	-	5	4	.80	1.45	1	-	-
Mechanics (Automotive)		12	-	2	10	7	.70	1.45	3	-	-
Printers		4	-	1	3	2	.67	1.93	1	-	-
Technicians (Electrical)		5	2	1	2	2	100	1.38	-	-	-
GREENFIELD	4	18	-	7	11	11	100	1.55	-	-	-
Carpenters		1	-	-	1	1	100	2.00	-	-	-
Machinists		11	-	3	8	8	100	1.55	-	-	-
Mechanics (Automotive)		5	-	3	2	2	100	1.25	-	-	-
Printers		1	-	1	-	-	-	--	-	-	-
HAVERHILL	11	60	1	5	54	53	.98	1.43	1	-	-
Carpenters		8	-	1	7	7	100	1.52	-	-	-
Machinists		7	1	2	4	4	100	1.35	-	-	-
Mechanics (Automotive)		8	-	-	8	7	.88	1.31	1	-	-
Painters		2	-	-	2	2	100	1.63	-	-	-
Plumbers		1	-	-	1	1	100	1.45	-	-	-
Printers		8	-	1	7	7	100	1.47	-	-	-
Sheet Metal Workers		3	-	-	3	3	100	1.41	-	-	-
Technicians (Electrical)		5	-	-	5	5	100	1.43	-	-	-
(Electronics)		14	-	-	14	14	100	2.08	-	-	-
Upholsterers		2	-	1	1	1	100	1.25	-	-	-
Welders		2	-	-	2	2	100	1.40	-	-	-
HOLYOKE	6	32	-	4	28	23	.82	1.50	5	-	-
Carpenters		2	-	-	2	1	.50	1.30	1	-	-
Machinists		7	-	2	5	2	.40	2.00	3	-	-
Mechanics (Automotive)		7	-	-	7	7	100	1.50	-	-	-
Printers		7	-	1	6	6	100	1.63	-	-	-
Sheet Metal Workers		4	-	-	4	3	.75	1.75	1	-	-
Technicians (Electrical)		5	-	1	4	4	100	1.25	-	-	-
KING PHILIP REGIONAL	2	18	-	4	14	7	.50	2.00	4	3	-
Carpenters		12	-	2	10	6	.60	2.00	2	2	-
Machinists		6	-	2	4	1	.25	1.50	2	1	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
LEOMINSTER	3	31	1	6	24	19	.80	1.50	5	-	-
Cabinetmakers		4	-	-	4	2	.50	1.50	2	-	-
Carpenters		14	1	1	12	11	.92	2.00	1	-	-
Mechanics (Automotive)		13	-	5	8	6	.75	1.50	2	-	-
LOWELL	7	49	-	3	46	40	.87	1.50	6	-	-
Carpenters		10	-	-	10	10	100	1.50	-	-	-
Draftsmen		8	-	-	8	5	.63	1.57	3	-	-
Machinists		8	-	2	6	5	.83	1.50	1	-	-
Mechanics (Automotive)		7	-	-	7	6	.86	1.50	1	-	-
Painters		2	-	-	2	2	100	1.40	-	-	-
Technicians (Electrical)		11	-	1	10	10	100	1.25	-	-	-
Upholsterers		3	-	-	3	2	.67	1.25	1	-	-
LYNN SHOE											
Shoemaking and Repair	1	72	22	-	50	43	.86	1.56	3	4	-
(Male)		(52)	(16)	(-)	(36)	(31)	(.86)	(1.56)	(2)	(3)	(-)
(Female)		(20)	(6)	(-)	(14)	(12)	(.86)	(1.54)	(1)	(1)	(-)
LYNN TRADE	7	79	-	7	72	66	.92	1.41	6	-	-
Cabinetmakers		8	-	-	8	7	.88	1.50	1	-	-
Carpenters		4	-	-	4	4	100	1.25	-	-	-
Draftsmen		8	-	1	7	7	100	1.41	-	-	-
Machinists		33	-	3	30	29	.97	1.60	1	-	-
Printers		4	-	-	4	4	100	1.25	-	-	-
Sheet Metal Workers		8	-	-	8	8	100	1.30	-	-	-
Technicians (Electrical)		14	-	3	11	7	.64	1.50	4	-	-
MALDEN	4	28	2	3	23	17	.74	1.30	3	3	-
Machinists		8	-	-	8	5	.63	1.30	2	1	-
Mechanics (Automotive)		10	-	2	8	5	.63	1.30	1	2	-
Sheet Metal Workers		3	1	-	2	2	100	1.30	-	-	-
Technicians (Electrical)		7	1	1	5	5	100	1.30	-	-	-
MARLBORO											
Machinists	1	8	1	1	6	6	100	1.60	-	-	-
MEDFORD	7	52	3	12	37	37	100	1.40	-	-	-
Cabinetmakers		7	1	1	5	5	100	1.35	-	-	-
Machinists		8	-	2	6	6	100	1.40	-	-	-
Mechanics (Automotive)		8	-	1	7	7	100	1.45	-	-	-
Painters		2	-	-	2	2	100	1.30	-	-	-
Printers		13	1	3	9	9	100	1.40	-	-	-
Sheet Metal Workers		3	-	2	1	1	100	1.25	-	-	-
Technicians (Electronics)		11	1	3	7	7	100	1.65	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
NANTUCKET											
Carpenters	1	5	1	-	4	3	.75	2.00	1	-	-
NEW BEDFORD	7	89	4	13	72	59	.82	1.65	13	-	-
Carpenters		11	-	3	8	7	.88	2.50	1	-	-
Machinists		26	2	4	20	16	.80	1.65	4	-	-
Mechanics (Automotive)		15	-	2	13	12	.92	1.25	1	-	-
Technicians (Electrical)		24	2	2	20	13	.65	1.40	7	-	-
(Engineers, Steam)		4	-	-	4	4	100	2.38	-	-	-
(Industrial Design)		2	-	-	2	2	100	2.00	-	-	-
Welders		7	-	2	5	5	100	1.50	-	-	-
NEW SALEM											
Mechanics (Automotive)	1	8	-	3	5	3	.60	1.25	2	-	-
NEWTON	6	24	3	3	18	12	.67	1.50	6	-	-
Carpenters		1	-	-	1	1	100	1.50	-	-	-
Machinists		3	1	-	2	2	100	1.60	-	-	-
Mechanics (Automotive)		6	-	2	4	4	100	1.60	-	-	-
Printers		5	1	-	4	2	.50	1.55	2	-	-
Technicians (Electrical)		5	1	1	3	2	.67	1.50	1	-	-
(Electronics)		4	-	-	4	1	.25	1.25	3	-	-
NORTH ADAMS											
Machinists	1	12	3	2	7	7	100	1.65	-	-	-
NORTHAMPTON	8	42	1	11	30	21	.70	1.50	8	1	-
Carpenters		13	-	3	10	10	100	1.50	-	-	-
Draftsmen		1	-	-	1	1	100	2.25	-	-	-
Machinists		4	-	1	3	3	100	1.98	-	-	-
Mechanics (Automotive)		8	-	3	5	4	.80	1.35	1	-	-
(Auto, Body, Fender)		5	-	1	4	-	-	--	4	-	-
Painters		4	-	-	4	1	.25	1.40	3	-	-
Sheet Metal Workers		3	-	1	2	2	100	2.25	-	-	-
Technicians (Electrical)		4	1	2	1	-	-	--	-	1	-
PEABODY	3	16	3	3	10	10	100	1.55	-	-	-
Machinists		7	1	-	6	6	100	1.70	-	-	-
Mechanics (Automotive)		5	-	2	3	3	100	1.55	-	-	-
Technicians (Electrical)		4	2	1	1	1	100	1.50	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
PITTSFIELD	7	60	6	18	36	29	.81	1.50	7	-	-
Carpenters		5	1	1	3	2	.67	1.50	1	-	-
Machinists		24	2	8	14	11	.79	1.57	3	-	-
Mechanics (Automotive)		6	2	-	4	4	100	1.56	-	-	-
(Auto, Body, Fender)		4	-	-	4	3	.75	1.45	1	-	-
Printers		10	1	5	4	4	100	1.47	-	-	-
Sheet Metal Workers		8	-	4	4	2	.50	1.50	2	-	-
Welders		3	-	-	3	3	100	1.70	-	-	-
PROVINCETOWN											
Sheet Metal Workers	1	2	-	-	2	-	-	--	2	-	-
QUINCY	9	57	5	8	44	33	.75	1.50	11	-	-
Cabinetmakers		4	-	2	2	1	.50	1.50	1	-	-
Machinists		7	1	1	5	4	.80	1.35	1	-	-
Mechanics (Automotive)		11	1	-	10	7	.70	1.50	3	-	-
(Auto,Body, Fender)		5	-	-	5	4	.80	1.30	1	-	-
Patternmakers		2	1	-	1	1	100	2.78	-	-	-
Plumbers		7	-	-	7	4	.57	1.75	3	-	-
Sheet Metal Workers		6	-	1	5	5	100	1.50	-	-	-
Technicians (Electrical)		9	2	2	5	4	.80	1.65	1	-	-
(Electronics)		6	-	2	4	3	.75	1.75	1	-	-
RANDOLPH											
Mechanics (Automotive)	1	6	1	-	5	4	.80	1.55	1	-	-
SALEM	4	30	1	11	18	14	.78	1.50	2	-	2
Machinists		7	-	5	2	2	100	1.75	-	-	-
Mechanics (Automotive)		10	-	3	7	4	.57	1.50	1	-	2
Technicians (Electrical)		6	-	1	5	4	.80	--	1	-	-
(Electronics)		7	1	2	4	4	100	1.50	-	-	-
SILVER LAKE REGIONAL	2	10	-	6	4	3	.75	1.80	1	-	-
Carpenters		6	-	2	4	3	.75	1.80	1	-	-
Mechanics (Automotive)		4	-	4	-	-	-	--	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SOMERVILLE	7	42	-	7	35	31	.89	1.61	4	-	-
Carpenters		8	-	-	8	7	.88	1.41	1	-	-
Draftsmen		1	-	-	1	1	100	2.00	-	-	-
Machinists		4	-	1	3	3	100	1.45	-	-	-
Mechanics (Automotive)		8	-	2	6	4	.67	1.75	2	-	-
Painters		2	-	-	2	2	100	1.65	-	-	-
Printers		6	-	2	4	3	.75	1.45	1	-	-
Technicians (Electrical)		13	-	2	11	11	100	1.61	-	-	-
SOUTHBRIDGE	4	4	-	1	3	2	.67	1.40	-	-	1
Cabinetmakers		1	-	1	-	-	-	--	-	-	-
Machinists		1	-	-	1	-	-	--	-	-	1
Sheet Metal Workers		1	-	-	1	1	100	1.40	-	-	-
Technicians (Electrical)		1	-	-	1	1	100	1.35	-	-	-
SPRINGFIELD	14	168	8	15	145	121	.86	1.35	19	5	-
Cabinetmakers		11	-	-	11	9	.82	1.45	2	-	-
Drafting (Architectural)		8	-	2	6	4	.67	1.25	2	-	-
(Male)		(7)	(-)	(1)	(6)	(4)	(.67)	(1.25)	(2)	(-)	(-)
(Female)		(1)	(-)	(1)	(-)	(-)	(-)	(--)	(-)	(-)	(-)
Draftsmen		5	-	1	4	2	.50	1.60	2	-	-
Mechanics (Automotive)		27	-	2	25	25	100	1.25	-	-	-
(Auto, Body, Fender)		6	-	1	5	3	.60	1.95	1	1	-
(Diesel)		3	-	-	3	3	100	1.50	-	-	-
Machinists		31	-	1	30	26	.87	1.35	2	2	-
Painters		8	1	-	7	4	.57	1.25	3	-	-
Patternmakers		3	-	-	3	3	100	1.25	-	-	-
Printers		14	-	-	14	13	.93	1.25	1	-	-
Sheet Metal Workers		6	-	-	6	6	100	2.27	-	-	-
Technicians (Electrical)		18	5	1	12	8	.67	1.60	2	2	-
(Electronics)		22	2	7	13	10	.77	1.25	3	-	-
Welders		6	-	-	6	5	.83	1.50	1	-	-
SWANSEA											
Mechanics (Automotive)	1	5	1	1	3	3	100	1.30	-	-	-
TAUNTON	3	18	-	-	18	18	100	1.50	-	-	-
Machinists		7	-	-	7	7	100	1.48	-	-	-
Mechanics (Automotive)		6	-	-	6	6	100	1.50	-	-	-
Sheet Metal Workers		5	-	-	5	5	100	1.67	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
WALTHAM	8	69	1	20	48	40	.83	1.65	8	-	-
Carpenters		8	-	3	5	5	100	2.05	-	-	-
Draftsmen		7	-	-	7	5	.71	1.55	2	-	-
Machinists		9	-	1	8	8	100	1.75	-	-	-
Mechanics (Automotive)		8	1	3	4	2	.50	1.60	2	-	-
(Auto, Body, Fender)		16	-	4	12	8	.67	1.65	4	-	-
Printers		6	-	1	5	5	100	1.50	-	-	-
Technicians (Electronics)		6	-	3	3	3	100	1.50	-	-	-
Welders		9	-	5	4	4	100	1.70	-	-	-
WAREHAM											
Sheet Metal Workers	1	8	-	3	5	5	100	1.30	-	-	-
WEBSTER	3	24	1	9	14	8	.57	1.62	6	-	-
Carpenters		10	1	2	7	4	.57	1.60	3	-	-
Mechanics (Automotive)		7	-	2	5	2	.40	1.73	3	-	-
Technicians (Electrical)		7	-	5	2	2	100	1.62	-	-	-
WESTFIELD	5	11	1	3	7	2	.29	1.50	5	-	-
Carpenters		2	-	-	2	1	.50	1.25	1	-	-
Draftsmen		4	1	1	2	-	-	---	2	-	-
Machinists		2	-	2	-	-	-	---	-	-	-
Mechanics (Automotive)		1	-	-	1	-	-	---	1	-	-
Technicians (Electrical)		2	-	-	2	1	.50	1.50	1	-	-
WEYMOUTH	5	62	2	19	41	35	.85	1.50	6	-	-
Cabinetmakers		12	-	2	10	8	.80	1.57	2	-	-
Carpenters		10	1	6	3	3	100	1.44	-	-	-
Mechanics (Automotive)		15	-	7	8	4	.50	1.81	4	-	-
Printers		17	1	3	13	13	100	1.50	-	-	-
Sheet Metal Workers		8	-	1	7	7	100	1.49	-	-	-
WORCESTER	11	204	8	23	173	153	.88	1.50	18	1	1
Cabinetmakers		17	2	4	11	8	.73	1.45	3	-	-
Carpenters		20	1	2	17	17	100	1.75	-	-	-
Machinists		49	1	2	46	44	.96	1.75	2	-	-
Mechanics (Automotive)		27	-	-	27	24	.89	1.50	2	1	-
Painters		9	-	2	7	4	.57	1.55	3	-	-
Patternmakers		6	1	1	4	2	.50	1.40	2	-	-
Plumbers		17	-	4	13	11	.85	1.50	1	-	1
Printers		17	-	4	13	13	100	1.50	-	-	-
Sheet Metal Workers		6	-	-	6	6	100	1.70	-	-	-
Technicians (Electrical)		29	3	3	23	19	.83	1.50	4	-	-
Welders		7	-	1	6	5	.83	1.80	1	-	-

TABLE III

ALL-DAY TRADE SCHOOLS (BOYS)

Report of Graduate Placements by Trades
Class of 1961-62

			Not available for employment			Employed in trade for which trained or in occupation related to trade					
Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Continued Training in Full Time School (3)	Entered Armed Service (4)	Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Number (6)	Per cent (Col. 6 ÷ 5) (7)	Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
ALL TRADES	243	2001	109	327	1565	1298	.83	1.50	232	23	12
BAKERS											
Boston	1	11	1	4	6	4	.67	1.50	2	=	=
CABINETMAKERS	14	115	5	20	90	71	.79	1.50	18	=	1
Beverly		2	-	1	1	1	100	1.50	-	-	-
Boston		23	2	3	18	12	.69	1.50	5	-	1
Brockton		7	-	2	5	5	100	1.60	-	-	-
Chicopee		6	-	3	3	3	100	1.25	-	-	-
Everett		9	-	-	9	8	.89	2.00	1	-	-
Fall River		4	-	1	3	2	.67	1.50	1	-	-
Leominster		4	-	-	4	2	.50	1.50	2	-	-
Lynn Trade		8	-	-	8	7	.88	1.50	1	-	-
Medford		7	1	1	5	5	100	1.35	-	-	-
Quincy		4	-	2	2	1	.50	1.50	1	-	-
Southbridge		1	-	1	-	-	-	--	-	-	-
Springfield		11	-	-	11	9	.82	1.45	2	-	-
Weymouth		12	-	2	10	8	.80	1.57	2	-	-
Worcester		17	2	4	11	8	.73	1.45	3	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CARPENTERS	27	203	6	31	166	144	.87	1.52	19	3	-
Avon		7	-	-	7	6	.86	1.25	1	-	-
Barnstable		7	-	1	6	4	.67	2.00	2	-	-
Belmont		3	-	1	2	2	100	1.50	-	-	-
Beverly		5	-	-	5	5	100	1.80	-	-	-
Boston		13	-	1	12	12	100	1.75	-	-	-
Dighton-Rehoboth Regional		7	-	-	7	6	.86	1.40	1	-	-
Fitchburg		5	-	1	4	1	.25	1.50	2	1	-
Gloucester		6	-	1	5	5	100	1.60	-	-	-
Greenfield		1	-	-	1	1	100	2.00	-	-	-
Haverhill		8	-	1	7	7	100	1.52	-	-	-
Holyoke		2	-	-	2	1	.50	1.30	1	-	-
King Philip Regional		12	-	2	10	6	.60	2.00	2	2	-
Leominster		14	1	1	12	11	.92	2.00	1	-	-
Lowell		10	-	-	10	10	100	1.50	-	-	-
Lynn Trade		4	-	-	4	4	100	1.25	-	-	-
Nantucket		5	1	-	4	3	.75	2.00	1	-	-
New Bedford		11	-	3	8	7	.88	2.50	1	-	-
Newton		1	-	-	1	1	100	1.50	-	-	-
Northampton		13	-	3	10	10	100	1.50	-	-	-
Pittsfield		5	1	1	3	2	.67	1.50	1	-	-
Silver Lake Regional		6	-	2	4	3	.75	1.80	1	-	-
Somerville		8	-	-	8	7	.88	1.41	1	-	-
Waltham		8	-	3	5	5	100	2.05	-	-	-
Webster		10	1	2	7	4	.57	1.60	3	-	-
Westfield		2	-	-	2	1	.50	1.25	1	-	-
Weymouth		10	1	6	3	3	100	1.44	-	-	-
Worcester		20	1	2	17	17	100	1.75	-	-	-
DRAFTSMEN (ARCHITECTURAL)											
Springfield	1	8	-	2	6	4	.67	1.25	2	-	-
(Male)		(7)	(-)	(1)	(6)	(4)	(.67)	(1.25)	(2)	(-)	(-)
(Female)		(1)	(-)	(1)	(-)	(-)	(-)	(--)	(-)	(-)	(-)
DRAFTSMEN	9	49	3	7	39	25	.64	1.57	13	1	-
Boston		12	1	4	7	3	.43	1.35	4	-	-
Chicopee		3	1	-	2	1	.50	1.35	-	1	-
Lowell		8	-	-	8	5	.63	1.57	3	-	-
Lynn Trade		8	-	1	7	7	100	1.41	-	-	-
Northampton		1	-	-	1	1	100	2.25	-	-	-
Somerville		1	-	-	1	1	100	2.00	-	-	-
Springfield		5	-	1	4	2	.50	1.60	2	-	-
Waltham		7	-	-	7	5	.71	1.55	2	-	-
Westfield		4	1	1	2	-	-	--	2	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MACHINISTS	37	395	19	60	316	284	.82	1.60	25	4	3
Apponequet Regional		8	2	1	5	5	100	1.60	-	-	-
Arlington		7	-	1	6	6	100	1.80	-	-	-
Attleboro		4	-	-	4	3	.75	1.50	1	-	-
Belmont		4	1	-	3	3	100	1.75	-	-	-
Beverly		3	1	2	-	-	-	--	-	-	-
Boston		16	-	2	14	11	.80	1.65	1	-	2
Brockton		9	-	2	7	7	100	1.70	-	-	-
Chicopee		8	-	5	3	3	100	1.44	-	-	-
Everett		13	-	-	13	13	100	1.65	-	-	-
Fall River		15	1	2	12	12	100	1.52	-	-	-
Fitchburg		4	-	-	4	3	.75	1.67	1	-	-
Framingham		9	-	-	9	9	100	1.65	-	-	-
Gloucester		6	1	-	5	4	.80	1.45	1	-	-
Greenfield		11	-	3	8	8	100	1.55	-	-	-
Haverhill		7	1	2	4	4	100	1.35	-	-	-
Holyoke		7	-	2	5	2	.40	2.00	3	-	-
King Philip Regional		6	-	2	4	1	.25	1.50	2	1	-
Lowell		8	-	2	6	5	.83	1.50	1	-	-
Lynn Trade		33	-	3	30	29	.97	1.60	1	-	-
Malden		8	-	-	8	5	.63	1.30	2	1	-
Marlboro		8	1	1	6	6	100	1.60	-	-	-
Medford		8	-	2	6	6	100	1.40	-	-	-
New Bedford		26	2	4	20	16	.80	1.65	4	-	-
Newton		3	1	-	2	2	100	1.60	-	-	-
North Adams		12	3	2	7	7	100	1.65	-	-	-
Northampton		4	-	1	3	3	100	1.98	-	-	-
Peabody		7	1	-	6	6	100	1.70	-	-	-
Pittsfield		24	2	8	14	11	.79	1.57	3	-	-
Quincy		7	1	1	5	4	.80	1.35	1	-	-
Salem		7	-	5	2	2	100	1.75	-	-	-
Somerville		4	-	1	3	3	100	1.45	-	-	-
Southbridge		1	-	-	1	-	-	--	-	-	1
Springfield		31	-	1	30	26	.87	1.35	2	2	-
Taunton		7	-	-	7	7	100	1.48	-	-	-
Waltham		9	-	1	8	8	100	1.75	-	-	-
Westfield		2	-	2	-	-	-	--	-	-	-
Worcester		49	1	2	46	44	.96	1.75	2	-	-
MECHANICS (AIRPLANE)											
Boston	1	13	1	5	7	=	=	==	7	=	=

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MECHANICS (AUTOMOTIVE)	41	350	11	68	271	217	.80	1.50	46	4	4
Abington		6	-	3	3	2	.67	1.25	1	-	-
Apponequet Regional		6	1	1	4	4	100	1.50	-	-	-
Arlington		7	2	1	4	4	100	1.45	-	-	-
Attleboro		5	-	2	3	1	.33	1.30	2	-	-
Barnstable		7	-	1	6	4	.67	1.63	2	-	-
Belmont		3	-	-	3	2	.67	1.50	1	-	-
Beverly		6	1	-	5	5	100	1.35	-	-	-
Boston		17	1	4	12	6	.50	1.50	3	1	2
Chicopee		5	-	-	5	4	.80	1.10	1	-	-
Dighton-Rehoboth Regional		7	-	3	4	4	100	1.75	-	-	-
Everett		5	-	-	5	5	100	1.50	-	-	-
Fall River		13	-	4	9	6	.67	1.25	3	-	-
Fitchburg		3	-	-	3	1	.33	1.45	2	-	-
Framingham		7	-	-	7	7	100	1.60	-	-	-
Gloucester		12	-	2	10	7	.70	1.45	3	-	-
Greenfield		5	-	3	2	2	100	1.25	-	-	-
Haverhill		8	-	-	8	7	.88	1.31	1	-	-
Holyoke		7	-	-	7	7	100	1.50	-	-	-
Leominster		13	-	5	8	6	.75	1.50	2	-	-
Lowell		7	-	-	7	6	.86	1.50	1	-	-
Malden		10	-	2	8	5	.63	1.30	1	2	-
Medford		8	-	1	7	7	100	1.45	-	-	-
New Bedford		15	-	2	13	12	.92	1.25	1	-	-
New Salem		8	-	3	5	3	.60	1.25	2	-	-
Newton		6	-	2	4	4	100	1.60	-	-	-
Northampton		8	-	3	5	4	.80	1.35	1	-	-
Peabody		5	-	2	3	3	100	1.55	-	-	-
Pittsfield		6	2	-	4	4	100	1.56	-	-	-
Quincy		11	1	-	10	7	.70	1.50	3	-	-
Randolph		6	1	-	5	4	.80	1.55	1	-	-
Salem		10	-	3	7	4	.57	1.50	1	-	2
Silver Lake Regional		4	-	4	-	-	-	--	-	-	-
Somerville		8	-	2	6	4	.67	1.75	2	-	-
Springfield		27	-	2	25	25	100	1.25	-	-	-
Swansea		5	1	1	3	3	100	1.30	-	-	-
Taunton		6	-	-	6	6	100	1.50	-	-	-
Waltham		8	1	3	4	2	.50	1.60	2	-	-
Webster		7	-	2	5	2	.40	1.73	3	-	-
Westfield		1	-	-	1	-	-	--	1	-	-
Weymouth		15	-	7	8	4	.50	1.81	4	-	-
Worcester		27	-	-	27	24	.89	1.50	2	1	-
MECHANICS (AUTO, BODY, FENDER)	6	37	-	6	31	19	.61	1.45	11	1	-
Chicopee		1	-	-	1	1	100	1.25	-	-	-
Northampton		5	-	1	4	-	-	--	4	-	-
Pittsfield		4	-	-	4	3	.75	1.45	1	-	-
Quincy		5	-	-	5	4	.80	1.30	1	-	-
Springfield		6	-	1	5	3	.60	1.95	1	1	-
Waltham		16	-	4	12	8	.67	1.65	4	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MECHANICS (DIESEL)											
Springfield	1	3	-	-	3	3	100	1.50	-	-	-
NEEDLE TRADES (POWER STITCHING)											
Chicopee	1	3	1	-	2	1	.50	1.10	1	-	-
PAINTERS	10	40	1	6	33	20	.61	1.40	12	1	-
Boston		7	-	2	5	1	.20	1.50	3	1	-
Everett		1	-	-	1	1	100	1.75	-	-	-
Fall River		3	-	2	1	1	100	1.25	-	-	-
Haverhill		2	-	-	2	2	100	1.63	-	-	-
Lowell		2	-	-	2	2	100	1.40	-	-	-
Medford		2	-	-	2	2	100	1.30	-	-	-
Northampton		4	-	-	4	1	.25	1.40	3	-	-
Somerville		2	-	-	2	2	100	1.65	-	-	-
Springfield		8	1	-	7	4	.57	1.25	3	-	-
Worcester		9	-	2	7	4	.57	1.55	3	-	-
PATTERNMAKERS	4	13	2	1	10	8	.80	1.40	2	-	-
Beverly		2	-	-	2	2	100	1.40	-	-	-
Quincy		2	1	-	1	1	100	2.78	-	-	-
Springfield		3	-	-	3	3	100	1.25	-	-	-
Worcester		6	1	1	4	2	.50	1.40	2	-	-
PLUMBERS	5	49	-	6	43	32	.74	1.50	10	-	1
Barnstable		6	-	-	6	2	.33	--	4	-	-
Boston		18	-	2	16	14	.88	1.50	2	-	-
Haverhill		1	-	-	1	1	100	1.45	-	-	-
Quincy		7	-	-	7	4	.57	1.75	3	-	-
Worcester		17	-	4	13	11	.85	1.50	1	-	1
PRINTERS	16	158	4	27	127	112	.88	1.50	13	-	2
Beverly		13	-	2	11	11	100	1.50	-	-	-
Boston		23	-	3	20	11	.55	1.70	7	-	2
Everett		10	-	-	10	9	.90	1.40	1	-	-
Gloucester		4	-	1	3	2	.67	1.93	1	-	-
Greenfield		1	-	1	-	-	-	--	-	-	-
Haverhill		8	-	1	7	7	100	1.47	-	-	-
Holyoke		7	-	1	6	6	100	1.63	-	-	-
Lynn Trade		4	-	-	4	4	100	1.25	-	-	-
Medford		13	1	3	9	9	100	1.40	-	-	-
Newton		5	1	-	4	2	.50	1.55	2	-	-
Pittsfield		10	1	5	4	4	100	1.47	-	-	-
Somerville		6	-	2	4	3	.75	1.45	1	-	-
Springfield		14	-	-	14	13	.93	1.25	1	-	-
Waltham		6	-	1	5	5	100	1.50	-	-	-
Weymouth		17	1	3	13	13	100	1.50	-	-	-
Worcester		17	-	4	13	13	100	1.50	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SHEET METAL WORKERS	19	93	2	14	77	71	.92	1.50	6	-	-
Belmont		3	-	1	2	2	100	1.65	-	-	-
Beverly		6	-	-	6	6	100	1.50	-	-	-
Boston		8	1	1	6	5	.83	1.70	1	-	-
Everett		2	-	-	2	2	100	1.25	-	-	-
Haverhill		3	-	-	3	3	100	1.41	-	-	-
Holyoke		4	-	-	4	3	.75	1.75	1	-	-
Lynn Trade		8	-	-	8	8	100	1.30	-	-	-
Malden		3	1	-	2	2	100	1.30	-	-	-
Medford		3	-	2	1	1	100	1.25	-	-	-
Northampton		3	-	1	2	2	100	2.25	-	-	-
Pittsfield		8	-	4	4	2	.50	1.50	2	-	-
Provincetown		2	-	-	2	-	-	--	2	-	-
Quincy		6	-	1	5	5	100	1.50	-	-	-
Southbridge		1	-	-	1	1	100	1.40	-	-	-
Springfield		6	-	-	6	6	100	2.27	-	-	-
Taunton		5	-	-	5	5	100	1.67	-	-	-
Wareham		8	-	3	5	5	100	1.30	-	-	-
Weymouth		8	-	1	7	7	100	1.49	-	-	-
Worcester		6	-	-	6	6	100	1.70	-	-	-
SHIP BUILDERS											
Barnstable	1	3	-	1	2	2	100	--	-	-	-
SHOEMAKING AND REPAIR											
Lynn	1	72	22	-	50	43	.86	1.56	3	4	-
(Male)		(52)	(16)	(-)	(36)	(31)	(.86)	(1.56)	(2)	(3)	(-)
(Female)		(20)	(6)	(-)	(14)	(12)	(.86)	(1.54)	(1)	(1)	(-)
TECHNICIANS (ELECTRICAL)	25	222	25	36	161	130	.81	1.50	26	5	-
Barnstable		4	-	-	4	3	.75	1.55	1	-	-
Belmont		5	-	1	4	4	100	1.60	-	-	-
Boston		9	2	-	7	7	100	1.50	-	-	-
Chicopee		6	-	3	3	3	100	1.35	-	-	-
Everett		4	2	-	2	2	100	1.25	-	-	-
Fall River		21	-	4	17	12	.71	1.40	3	2	-
Fitchburg		4	2	1	1	-	-	--	1	-	-
Gloucester		5	2	1	2	2	100	1.38	-	-	-
Haverhill		5	-	-	5	5	100	1.43	-	-	-
Holyoke		5	-	1	4	4	100	1.25	-	-	-
Lowell		11	-	1	10	10	100	1.25	-	-	-
Lynn Trade		14	-	3	11	7	.64	1.50	4	-	-
Malden		7	1	1	5	5	100	1.30	-	-	-
New Bedford		24	2	2	20	13	.65	1.40	7	-	-
Newton		5	1	1	3	2	.67	1.50	1	-	-
Northampton		4	1	2	1	-	-	--	-	1	-
Peabody		4	2	1	1	1	100	1.50	-	-	-
Quincy		9	2	2	5	4	.80	1.65	1	-	-
Salem		6	-	1	5	4	.80	--	1	-	-
Somerville		13	-	2	11	11	100	1.61	-	-	-
Southbridge		1	-	-	1	1	100	1.35	-	-	-
Springfield		18	5	1	12	8	.67	1.60	2	2	-
Webster		7	-	5	2	2	100	1.62	-	-	-
Westfield		2	-	-	2	1	.50	1.50	1	-	-
Worcester		29	3	3	23	19	.83	1.50	4	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TECHNICIANS (ELECTRONICS)	10	100	5	22	73	63	.86	1.55	9	-	1
Boston		17	1	5	11	8	.73	1.60	2	-	1
Everett		4	-	-	4	4	100	1.65	-	-	-
Framingham		9	-	-	9	9	100	1.55	-	-	-
Haverhill		14	-	-	14	14	100	2.08	-	-	-
Medford		11	1	3	7	7	100	1.65	-	-	-
Newton		4	-	-	4	1	.25	1.25	3	-	-
Quincy		6	-	2	4	3	.75	1.75	1	-	-
Salem		7	1	2	4	4	100	1.50	-	-	-
Springfield		22	2	7	13	10	.77	1.25	3	-	-
Waltham		6	-	3	3	3	100	1.50	-	-	-
TECHNICIANS (ENGINEERS, STEAM)											
New Bedford	1	4	-	-	4	4	100	2.38	-	-	-
TECHNICIANS (INDUSTRIAL DESIGN)											
New Bedford	1	2	-	-	2	2	100	2.00	-	-	-
UPHOLSTERERS	3	7	-	1	6	3	.50	1.25	3	-	-
Everett		2	-	-	2	-	-	--	2	-	-
Haverhill		2	-	1	1	1	100	1.25	-	-	-
Lowell		3	-	-	3	2	.67	1.25	1	-	-
WELDERS	8	51	1	10	40	36	.90	1.70	4	-	-
Boston		13	-	1	12	11	.92	1.70	1	-	-
Chicopee		4	1	1	2	1	.50	1.50	1	-	-
Haverhill		2	-	-	2	2	100	1.40	-	-	-
New Bedford		7	-	2	5	5	100	1.50	-	-	-
Pittsfield		3	-	-	3	3	100	1.70	-	-	-
Springfield		6	-	-	6	5	.83	1.50	1	-	-
Waltham		9	-	5	4	4	100	1.70	-	-	-
Worcester		7	-	1	6	5	.83	1.80	1	-	-

TABLE IV

ALL-DAY TRADE SCHOOLS (GIRLS)

Report of Graduate Placements by Schools
Class of 1961-62

Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Not available for employment: Continued Training in Full Time School (3)	Not available for employment: Entered Armed Service (4)	Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Employed in trade for which trained or in occupation related to trade: Number (6)	Employed in trade for which trained or in occupation related to trade: Per cent (Col. 6 + 5) (7)	Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
ALL SCHOOLS	15	293	9	4	280	256	.92	1.25	14	7	3
BOSTON	3	54	-	-	54	54	100	1.15	-	-	-
Beauty Operator		31	-	-	31	31	100	1.00	-	-	-
Food Trades		6	-	-	6	6	100	1.25	-	-	-
Needle Trades		17	-	-	17	17	100	1.15	-	-	-
ESSEX COUNTY											
Beauty Operator	1	32	-	-	32	27	.84	1.25	4	1	-
(Male)		(3)	(-)	(-)	(3)	(3)	(100)	(1.50)	(-)	(-)	(-)
(Female)		(29)	(-)	(-)	(29)	(24)	(.83)	(1.25)	(4)	(1)	(-)
FALL RIVER											
Needle Trades	1	28	3	-	25	22	.88	1.15	-	1	2
NORWOOD	3	56	2	-	54	47	.87	1.25	5	2	-
Beauty Operator		42	-	-	42	37	.88	1.25	3	2	-
(Male)		(4)	(-)	(-)	(4)	(4)	(100)	(1.25)	(-)	(-)	(-)
(Female)		(38)	(-)	(-)	(38)	(33)	(.87)	(1.25)	(3)	(2)	(-)
Food Trades		11	1	-	10	8	.80	1.72	2	-	-
(Male)		(7)	(-)	(-)	(7)	(6)	(.86)	(1.72)	(1)	(-)	(-)
(Female)		(4)	(1)	(-)	(3)	(2)	(.67)	(1.72)	(1)	(-)	(-)
Needle Trades		3	1	-	2	2	100	1.00	-	-	-
SPRINGFIELD	3	66	2	4	60	55	.92	1.25	5	-	-
Beauty Operator		42	-	2	40	36	.90	1.25	4	-	-
Food Trades		15	2	1	12	12	100	1.35	-	-	-
(Male)		(3)	(-)	(-)	(3)	(3)	(100)	(1.35)	(-)	(-)	(-)
(Female)		(12)	(2)	(1)	(9)	(9)	(100)	(1.35)	(-)	(-)	(-)
Needle Trades		9	-	1	8	7	.88	1.20	1	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
WORCESTER	4	57	2	-	55	51	.93	1.08	-	3	1
Beauty Operator		39	-	-	39	36	.92	1.00	-	2	1
Food Trades		6	1	-	5	5	100	1.25	-	-	-
(Male)		(2)	(-)	(-)	(2)	(2)	(100)	(1.66)	(-)	(-)	(-)
(Female)		(4)	(1)	(-)	(3)	(3)	(100)	(1.25)	(-)	(-)	(-)
Needle Trades		10	1	-	9	8	.89	1.08	-	1	-
Printing		2	-	-	2	2	100	1.23	-	-	-

TABLE V

ALL-DAY TRADE SCHOOLS (GIRLS)

Report of Graduate Placements by Trades
Class of 1961-62

Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Not available for employment		Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Employed in trade for which trained or in occupation related to trade		Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
			Continued Training in Full Time School (3)	Entered Armed Service (4)		Number (6)	Per cent (Col. 6 ÷ 5) (7)				
ALL TRADES	15	293	9	4	280	256	.92	1.25	14	7	3
BEAUTY OPERATOR	5	186	-	2	184	167	.91	1.25	11	5	1
Boston		31	-	-	31	31	100	1.00	-	-	-
Essex County		32	-	-	32	27	.84	1.25	4	1	-
(Male)		(3)	(-)	(-)	(3)	(3)	(100)	(1.50)	(-)	(-)	(-)
(Female)		(29)	(-)	(-)	(29)	(24)	(.83)	(1.25)	(4)	(1)	(-)
Norwood		42	-	-	42	37	.88	1.25	3	2	-
(Male)		(4)	(-)	(-)	(4)	(4)	(100)	(1.25)	(-)	(-)	(-)
(Female)		(38)	(-)	(-)	(38)	(33)	(.87)	(1.25)	(3)	(2)	(-)
Springfield		42	-	2	40	36	.90	1.25	4	-	-
Worcester		39	-	-	39	36	.92	1.00	-	2	1
FOOD TRADES	4	38	4	1	33	31	.91	1.25	2	-	-
Boston		6	-	-	6	6	100	1.25	-	-	-
Norwood		11	1	-	10	8	.80	1.72	2	-	-
(Male)		(7)	(-)	(-)	(7)	(6)	(.86)	(1.72)	(1)	(-)	(-)
(Female)		(4)	(1)	(-)	(3)	(2)	(.67)	(1.72)	(1)	(-)	(-)
Springfield		15	2	1	12	12	100	1.35	-	-	-
(Male)		(3)	(-)	(-)	(3)	(3)	(100)	(1.35)	(-)	(-)	(-)
(Female)		(12)	(2)	(1)	(9)	(9)	(100)	(1.35)	(-)	(-)	(-)
Worcester		6	1	-	5	5	100	1.25	-	-	-
(Male)		(2)	(-)	(-)	(2)	(2)	(100)	(1.66)	(-)	(-)	(-)
(Female)		(4)	(1)	(-)	(3)	(3)	(100)	(1.25)	(-)	(-)	(-)

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
NEEDLE TRADES	5	67	5	1	61	56	.93	1.15	1	2	2
Boston		17	-	-	17	17	100	1.15	-	-	-
Fall River		28	3	-	25	22	.88	1.15	-	1	2
Norwood		3	1	-	2	2	100	1.00	-	-	-
Springfield		9	-	1	8	7	.88	1.20	1	-	-
Worcester		10	1	-	9	8	.89	1.08	-	1	-
PRINTING											
Worcester	1	2	-	-	2	2	100	1.23	-	-	-

TABLE VI

PART-TIME COOPERATIVE SCHOOLS

Report of Graduate Placements by Schools
Class of 1961-62

			Not available for employment			Employed in trade for which trained or in occupation related to trade					
Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Continued Training in Full Time School (3)	Entered Armed Service (4)	Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Number (6)	Per cent (Col. 6 ÷ 5) (7)	Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
ALL SCHOOLS	62	554	1	99	454	452	.99	1.60	2	--	--
ARLINGTON Mechanics (Automotive)	1	3	--	--	3	3	100	1.88	--	--	--
BEVERLY Machinists	1	23	--	3	20	20	100	2.40	--	--	--

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BOSTON	9	294	-	85	209	208	.99	1.70	1	-	-
Brighton											
Mechanics (Automotive)		74	-	23	51	51	100	1.70	-	-	-
Charlestown											
Technicians (Electrical)		58	-	16	42	42	100	1.55	-	-	-
Dorchester		39	-	12	27	27	100	1.48	-	-	-
Cabinetmakers		30	-	11	19	19	100	1.48	-	-	-
Upholsterers		9	-	1	8	8	100	1.27	-	-	-
East Boston											
Machinists		28	-	2	26	26	100	1.75	-	-	-
Hyde Park											
Machinists		45	-	22	23	23	100	1.87	-	-	-
Roxbury											
Printers		31	-	5	26	26	100	1.40	-	-	-
South Boston		19	-	5	14	13	.93	1.76	1	-	-
Mechanics (Auto, Body, Fender)		7	-	2	5	5	100	1.65	-	-	-
Sheet Metal Workers		12	-	3	9	8	.89	1.76	1	-	-
FITCHBURG	4	13	-	3	10	9	.90	1.72	1	-	-
Carpenters		1	-	-	1	1	100	1.85	-	-	-
Machinists		6	-	1	5	5	100	1.72	-	-	-
Mechanics (Automotive)		3	-	1	2	1	.50	2.00	1	-	-
Technicians (Electrical)		3	-	1	2	2	100	1.35	-	-	-
HAVERHILL	9	32	-	1	31	31	100	1.42	-	-	-
Carpenters		6	-	1	5	5	100	1.50	-	-	-
Machinists		7	-	-	7	7	100	1.56	-	-	-
Mechanics (Automotive)		4	-	-	4	4	100	1.42	-	-	-
Painters		1	-	-	1	1	100	1.35	-	-	-
Plumbers		1	-	-	1	1	100	1.30	-	-	-
Printers		2	-	-	2	2	100	1.35	-	-	-
Sheet Metal Workers		4	-	-	4	4	100	1.72	-	-	-
Technicians (Electrical)		5	-	-	5	5	100	1.38	-	-	-
Welders		2	-	-	2	2	100	1.53	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HOLYOKE	4	14	1	-	13	13	100	1.48	-	-	-
Machinists		5	-	-	5	5	100	1.35	-	-	-
Mechanics (Automotive)		2	-	-	2	2	100	1.73	-	-	-
Printers		5	1	-	4	4	100	1.48	-	-	-
Technicians (Electrical)		2	-	-	2	2	100	1.50	-	-	-
NEWTON	6	18	-	-	18	18	100	1.75	-	-	-
Carpenters		2	-	-	2	2	100	1.85	-	-	-
Machinists		1	-	-	1	1	100	1.85	-	-	-
Printers		2	-	-	2	2	100	1.25	-	-	-
Sheet Metal Workers		4	-	-	4	4	100	1.75	-	-	-
Technicians (Electrical)		2	-	-	2	2	100	1.50	-	-	-
(Electronics)		7	-	-	7	7	100	1.40	-	-	-
PITTSFIELD	8	34	-	-	34	34	100	1.60	-	-	-
Carpenters		5	-	-	5	5	100	1.85	-	-	-
Draftsmen		1	-	-	1	1	100	1.80	-	-	-
Machinists		5	-	-	5	5	100	1.60	-	-	-
Mechanics (Automotive)		7	-	-	7	7	100	1.55	-	-	-
(Auto, Body, Fender)		7	-	-	7	7	100	1.50	-	-	-
Printers		4	-	-	4	4	100	1.52	-	-	-
Sheet Metal Workers		3	-	-	3	3	100	1.70	-	-	-
Welders		2	-	-	2	2	100	1.70	-	-	-
SOUTHBRIDGE	5	14	-	1	13	13	100	1.45	-	-	-
Cabinetmakers		2	-	-	2	2	100	1.37	-	-	-
Draftsmen		4	-	-	4	4	100	1.41	-	-	-
Machinists		5	-	-	5	5	100	1.61	-	-	-
Sheet Metal Workers		2	-	1	1	1	100	1.45	-	-	-
Technicians (Electrical)		1	-	-	1	1	100	1.46	-	-	-
SPRINGFIELD	11	74	-	6	68	68	100	1.45	-	-	-
Cabinetmakers		7	-	-	7	7	100	1.45	-	-	-
Draftsmen		2	-	-	2	2	100	1.60	-	-	-
Machinists		16	-	-	16	16	100	1.35	-	-	-
Mechanics (Automotive)		19	-	-	19	19	100	1.35	-	-	-
(Auto, Body, Fender)		1	-	-	1	1	100	1.95	-	-	-
Painters		3	-	-	3	3	100	1.25	-	-	-
Patternmakers		8	-	3	5	5	100	1.35	-	-	-
Printers		6	-	-	6	6	100	1.25	-	-	-
Sheet Metal Workers		5	-	-	5	5	100	1.50	-	-	-
Technicians (Electronics)		4	-	3	1	1	100	1.50	-	-	-
Welders		3	-	-	3	3	100	1.50	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
WESTFIELD	4	35	-	-	35	35	100	1.50	-	-	-
Carpenters		4	-	-	4	4	100	--	-	-	-
Machinists		24	-	-	24	24	100	--	-	-	-
Mechanics (Automotive)		6	-	-	6	6	100	--	-	-	-
Technicians (Electrical)		1	-	-	1	1	100	1.50	-	-	-

TABLE VII

PART-TIME COOPERATIVE SCHOOLS

Report of Graduate Placements by Trades
Class of 1961-62

			Not available for employment			Employed in trade for which trained or in occupation related to trade					
Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Continued Training in Full Time School (3)	Entered Armed Service (4)	Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Number (6)	Per cent (Col. 6 ÷ 5) (7)	Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
ALL TRADES	62	554	1	99	454	452	.99	1.50	2	=	=
CABINETMAKERS	3	39	=	11	28	28	100	1.48	=	=	=
Boston (Dorchester)		30	-	11	19	19	100	1.45	-	-	-
Southbridge		2	-	-	2	2	100	1.37	-	-	-
Springfield		7	-	-	7	7	100	1.45	-	-	-
CARPENTERS	5	18	=	1	17	17	100	1.85	=	=	=
Fitchburg		1	-	-	1	1	100	1.85	-	-	-
Haverhill		6	-	1	5	5	100	1.50	-	-	-
Newton		2	-	-	2	2	100	1.85	-	-	-
Pittsfield		5	-	-	5	5	100	1.85	-	-	-
Westfield		4	-	-	4	4	100	--	-	-	-
DRAFTSMEN	3	7	=	=	7	7	100	1.60	=	=	=
Pittsfield		1	-	-	1	1	100	1.80	-	-	-
Southbridge		4	-	-	4	4	100	1.41	-	-	-
Springfield		2	-	-	2	2	100	1.60	-	-	-
MACHINISTS	11	165	=	28	137	137	100	1.72	=	=	=
Beverly		23	-	3	20	20	100	2.40	-	-	-
Boston (East Boston)		28	-	2	26	26	100	1.75	-	-	-
(Hyde Park)		45	-	22	23	23	100	1.87	-	-	-
Fitchburg		6	-	1	5	5	100	1.72	-	-	-
Haverhill		7	-	-	7	7	100	1.56	-	-	-
Holyoke		5	-	-	5	5	100	1.35	-	-	-
Newton		1	-	-	1	1	100	1.85	-	-	-
Pittsfield		5	-	-	5	5	100	1.60	-	-	-
Southbridge		5	-	-	5	5	100	1.61	-	-	-
Springfield		16	-	-	16	16	100	1.35	-	-	-
Westfield		24	-	-	24	24	100	--	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MECHANICS (AUTOMOTIVE)	8	118	-	24	94	93	.99	1.70	1	-	-
Arlington		3	-	-	3	3	100	1.88	-	-	-
Boston (Brighton)		74	-	23	51	51	100	1.70	-	-	-
Fitchburg		3	-	1	2	1	.50	2.00	1	-	-
Haverhill		4	-	-	4	4	100	1.42	-	-	-
Holyoke		2	-	-	2	2	100	1.73	-	-	-
Pittsfield		7	-	-	7	7	100	1.55	-	-	-
Springfield		19	-	-	19	19	100	1.35	-	-	-
Westfield		6	-	-	6	6	100	--	-	-	-
MECHANICS (AUTO, BODY, FENDER)	3	15	-	2	13	13	100	1.65	-	-	-
Boston (South Boston)		7	-	2	5	5	100	1.65	-	-	-
Pittsfield		7	-	-	7	7	100	1.50	-	-	-
Springfield		1	-	-	1	1	100	1.95	-	-	-
PAINTERS	2	4	-	-	4	4	100	1.25	-	-	-
Haverhill		1	-	-	1	1	100	1.35	-	-	-
Springfield		3	-	-	3	3	100	1.25	-	-	-
PATTERNMAKERS Springfield	1	8	-	3	5	5	100	1.35	-	-	-
PLUMBERS Haverhill	1	1	-	-	1	1	100	1.30	-	-	-
PRINTERS	6	50	1	5	44	44	100	1.40	-	-	-
Boston (Roxbury)		31	-	5	26	26	100	1.40	-	-	-
Haverhill		2	-	-	2	2	100	1.35	-	-	-
Holyoke		5	1	-	4	4	100	1.48	-	-	-
Newton		2	-	-	2	2	100	1.25	-	-	-
Pittsfield		4	-	-	4	4	100	1.52	-	-	-
Springfield		6	-	-	6	6	100	1.25	-	-	-
SHEET METAL WORKERS	6	30	-	4	26	25	.96	1.75	1	-	-
Boston (South Boston)		12	-	3	9	8	.89	1.76	1	-	-
Haverhill		4	-	-	4	4	100	1.72	-	-	-
Newton		4	-	-	4	4	100	1.75	-	-	-
Pittsfield		3	-	-	3	3	100	1.70	-	-	-
Southbridge		2	-	1	1	1	100	1.45	-	-	-
Springfield		5	-	-	5	5	100	1.50	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TECHNICIANS (ELECTRICAL)	7	72	-	17	55	55	100	1.50	-	-	-
Boston (Charlestown)		58	-	16	42	42	100	1.55	-	-	-
Fitchburg		3	-	1	2	2	100	1.35	-	-	-
Haverhill		5	-	-	5	5	100	1.38	-	-	-
Holyoke		2	-	-	2	2	100	1.50	-	-	-
Newton		2	-	-	2	2	100	1.50	-	-	-
Southbridge		1	-	-	1	1	100	1.46	-	-	-
Westfield		1	-	-	1	1	100	1.50	-	-	-
TECHNICIANS (ELECTRONICS)	2	11	-	3	8	8	100	1.40	-	-	-
Newton		7	-	-	7	7	100	1.40	-	-	-
Springfield		4	-	3	1	1	100	1.50	-	-	-
UPHOLSTERERS											
Boston (Dorchester)	1	9	-	1	8	8	100	1.27	-	-	-
WELDERS	3	7	-	-	7	7	100	1.53	-	-	-
Haverhill		2	-	-	2	2	100	1.53	-	-	-
Pittsfield		2	-	-	2	2	100	1.70	-	-	-
Springfield		3	-	-	3	3	100	1.50	-	-	-

TABLE VIII

DAY PRACTICAL NURSING SCHOOLS

Report of Graduate Placements by Schools
Class of 1961-62

Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Not available for employment		Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Employed in trade for which trained or in occupation related to trade		Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
			Continued Training in Full Time School (3)	Entered Armed Service (4)		Number (6)	Per cent (Col. 6 ÷ 5) (7)				
ALL SCHOOLS	12	302	7	3	292	278	.95	1.50	3	7	4
BOSTON											
Practical Nursing	1	30	-	-	30	29	.97	1.50	1	-	-
FALL RIVER											
Practical Nursing	1	30	1	-	29	28	.93	1.35	1	-	-
LAWRENCE											
Practical Nursing	1	26	1	-	25	25	100	1.50	-	-	-
(Male)		(2)	(-)	(-)	(2)	(2)	(100)	(1.50)	(-)	(-)	(-)
(Female)		(24)	(1)	(-)	(23)	(23)	(100)	(1.50)	(-)	(-)	(-)
NORWOOD											
Practical Nursing	1	13	-	-	13	9	.69	1.45	1	3	-
PITTSFIELD											
Practical Nursing	1	18	-	-	18	18	100	1.45	-	-	-
(Male)		(2)	(-)	(-)	(2)	(2)	(100)	(1.65)	(-)	(-)	(-)
(Female)		(16)	(-)	(-)	(16)	(16)	(100)	(1.45)	(-)	(-)	(-)
SPRINGFIELD	4	103	5	3	95	95	100	1.60	-	-	-
Dental Assistant		25	2	1	22	22	100	1.40	-	-	-
Medical Assistant		21	1	-	20	20	100	1.65	-	-	-
Practical Nursing		35	-	2	33	33	100	1.60	-	-	-
Surgical Technician		22	2	-	20	20	100	1.38	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TAUNTON											
Practical Nursing	1	32	-	-	32	26	.81	1.50	-	2	4
(Male)		(3)	(-)	(-)	(3)	(3)	(100)	(1.83)	(-)	(-)	(-)
(Female)		(29)	(-)	(-)	(29)	(23)	(179)	(1.50)	(-)	(2)	(4)
WORCESTER	2	50	-	-	50	48	.96	1.29	-	2	-
Practical Nursing		42	-	-	42	40	.95	1.29	-	2	-
Surgical Technician		8	-	-	8	8	100	1.30	-	-	-

TABLE IX

DAY PRACTICAL NURSING SCHOOLS

Report of Graduate Placement by Trades
Class of 1961-62

			Not available for employment			Employed in trade for which trained or in occupation related to trade					
Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Continued Training in Full Time School (3)	Entered Armed Service (4)	Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Number (6)	Per cent (Col. 6 ÷ 5) (7)	Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
ALL TRADES	12	302	7	3	292	278	.95	1.50	3	7	4
DENTAL ASSISTANT Springfield	1	25	2	1	22	22	100	1.40	-	-	-
MEDICAL ASSISTANT Springfield	1	21	1	-	20	20	100	1.65	-	-	-
PRACTICAL NURSING	8	226	2	2	222	208	.93	1.50	3	7	4
Boston		30	-	-	30	29	.97	1.50	1	-	-
Fall River		30	1	-	29	28	.93	1.35	1	-	-
Lawrence		26	1	-	25	25	100	1.50	-	-	-
(Male)		(2)	(-)	(-)	(2)	(2)	(100)	(1.50)	(-)	(-)	(-)
(Female)		(24)	(1)	(-)	(23)	(23)	(100)	(1.50)	(-)	(-)	(-)
Norwood		13	-	-	13	9	.69	1.45	1	3	-
Pittsfield		18	-	-	18	18	100	1.45	-	-	-
(Male)		(2)	(-)	(-)	(2)	(2)	(100)	(1.65)	(-)	(-)	(-)
(Female)		(16)	(-)	(-)	(16)	(16)	(100)	(1.45)	(-)	(-)	(-)
Springfield		35	-	2	33	33	100	1.60	-	-	-
Taunton		32	-	-	32	26	.81	1.50	-	2	4
(Male)		(3)	(-)	(-)	(3)	(3)	(100)	(1.83)	(-)	(-)	(-)
(Female)		(29)	(-)	(-)	(29)	(23)	(.79)	(1.50)	(-)	(2)	(4)
Worcester		42	-	-	42	40	.95	1.29	-	2	-
SURGICAL TECHNICIAN	2	30	2	-	28	28	100	1.38	-	-	-
Springfield		22	2	-	20	20	100	1.38	-	-	-
Worcester		8	-	-	8	8	100	1.30	-	-	-

TABLE X

DAY AREA VOCATIONAL SCHOOLS

Report of Graduate Placement by Schools
Class of 1961-62

Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Not available for employment: Continued Training in Full Time School (3)	Not available for employment: Entered Armed Service (4)	Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Employed in trade for which trained or in occupation related to trade: Number (6)	Employed in trade for which trained or in occupation related to trade: Per cent (Col 6 ÷ 5) (7)	Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
ALL SCHOOLS	16	165	11	12	142	136	.96	1.75	5	-	1
ARLINGTON Technicians (Electronics)	1	9	1	-	8	8	100	1.75	-	-	-
FALL RIVER Machine Drafting and Design Technology	1	6	-	1	5	5	100	1.50	-	-	-
LEOMINSTER	2	24	-	-	24	23	.96	1.75	1	-	-
Machine Drafting and Design Technology		10	-	-	10	9	.90	2.00	1	-	-
Tool and Die Technology		14	-	-	14	14	100	1.75	-	-	-
MEDFORD Industrial Electronics	1	16	3	2	11	11	100	1.40	-	-	-
NEWTON	2	5	-	-	5	5	100	1.40	-	-	-
Electronics		4	-	-	4	4	100	1.40	-	-	-
Machine Drafting and Design Technology		1	-	-	1	1	100	1.75	-	-	-
PITTSFIELD Draftsmen	1	7	1	2	4	4	100	2.25	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
QUINCY											
Technicians (Electronics)	1	10	3	2	5	3	.60	1.75	1	-	1
SPRINGFIELD	3	27	1	2	24	24	100	1.80	-	-	-
Electronics Communication		2	-	-	2	2	100	1.80	-	-	-
Machine and Tool Design		10	-	-	10	10	100	1.50	-	-	-
Oil Heat and Power Technology		15	1	2	12	12	100	2.00	-	-	-
WORCESTER	4	61	2	3	56	53	.95	1.85	3	-	-
Industrial Electronics		10	1	-	9	9	100	2.00	-	-	-
Machine Drafting and Design Technology		35	-	2	33	31	.94	1.85	2	-	-
Mechanical Technology		11	1	1	9	8	.89	1.75	1	-	-
Metals Technology		5	-	-	5	5	100	2.05	-	-	-

TABLE XI

DAY AREA VOCATIONAL SCHOOLS

Report of Graduate Placement by Trades
Class of 1961-62

Trade or Course (1)	Number of Courses (1a)	Total Number of Graduates (2)	Not available for employment		Available for Employment (Col. 2 minus 3 and 4) and (Col. 6 plus 9 to 11) (5)	Employed in trade for which trained or in occupation related to trade		Median Hourly Wage (8)	Employed in occupation not related to trade (9)	Unemployed (10)	Unaccounted for (11)
			Continued Training in Full Time School (3)	Entered Armed Service (4)		Number (6)	Per cent (Col. 6 ÷ 5) (7)				
ALL TRADES	16	165	11	12	142	136	.96	1.75	5	-	1
DRAFTSMEN Pittsfield	1	7	1	2	4	4	100	2.25	-	-	-
ELECTRONICS Newton	1	4	-	-	4	4	100	1.40	-	-	-
ELECTRONICS COMMUNICATION Springfield	1	2	-	-	2	2	100	1.80	-	-	-
INDUSTRIAL ELECTRONICS	2	26	4	2	20	20	100	1.40	-	-	-
Medford		16	3	2	11	11	100	1.40	-	-	-
Worcester		10	1	-	9	9	100	2.00	-	-	-
MACHINE DRAFTING AND DESIGN TECHNOLOGY	4	52	-	3	49	46	.94	1.85	3	-	-
Fall River		6	-	1	5	5	100	1.50	-	-	-
Leominster		10	-	-	10	9	.90	2.00	1	-	-
Newton		1	-	-	1	1	100	1.75	-	-	-
Worcester		35	-	2	33	31	.94	1.85	2	-	-
MACHINE AND TOOL DESIGN Springfield	1	10	-	-	10	10	100	1.50	-	-	-

(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MECHANICAL TECHNOLOGY Worcester	1	11	1	1	9	8	.89	1.75	1	-	-
METALS TECHNOLOGY Worcester	1	5	-	-	5	5	100	2.05	-	-	-
OIL HEAT AND POWER TECHNOLOGY Springfield	1	15	1	2	12	12	100	2.00	-	-	-
TECHNICIAN (ELECTRONICS)	2	19	4	2	13	11	.85	1.75	1	-	1
Arlington		9	1	-	8	8	100	1.75	-	-	-
Quincy		10	3	2	5	3	.60	1.75	1	-	1
TOOL AND DIE TECHNOLOGY Leominster	1	14	-	-	14	14	100	1.75	-	-	-

VT 001 024

Placement of Graduates from Trade and Industrial Programs in Massachusetts State-Aided Vocational Schools, Class of 1964.

Massachusetts State Dept of Educ, Boston. Div of Vocat Ed
Pub-271
Pub Date - 1May65
MF AVAILABLE IN VT-ERIC SET. 35p.

*GRADUATE SURVEYS, GRADUATES, *VOCATIONAL FOLLOWUP, *VOCATIONAL SCHOOLS, *TRADE AND INDUSTRIAL EDUCATION, HEALTH OCCUPATIONS EDUCATION, COOPERATIVE EDUCATION, JOB PLACEMENT, WAGES, Massachusetts,

The report was compiled from statistics submitted by directors of 110 local schools. Of 2,811 male and 757 female graduates, (1) 394 males and 1 female entered the armed services, (2) 177 males and 16 females continued training in full-time schools, (3) 24 males and 25 females were otherwise unavailable for employment, (4) 2,216 males and 715 females were available for employment, (5) 1,918 males and 623 females were employed in the occupation trained for, (6) 76 males and 17 females were employed in a field related to that trained for, (7) 190 males and 22 females were employed in fields unrelated to one trained for, (8) 2,184 males (99 percent) and 662 females (93 percent) had full-time jobs, (9) the median hourly wage for males was $1.58, for females, $1.32, (10) 1 male and 21 females were employed part-time, (11) 18 males and 14 females were unemployed, and (12) 13 males and 18 females were unaccounted for. Tables show breakdown by schools, trades, male, and female for all day trade, part-time cooperative trade, practical nursing, and area vocational schools. (MM)

VT 001 024

1024

ED022065

COMMONWEALTH OF MASSACHUSETTS
Department of Education

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

PLACEMENT OF GRADUATES
from
TRADE AND INDUSTRIAL PROGRAMS
in
MASSACHUSETTS STATE-AIDED VOCATIONAL SCHOOLS

Class of 1964

This report is compiled from statistics submitted by Directors of local schools.

March 1, 1965

Division of Vocational Education
Walter J. Markham, *Director*
John F. Shea, *Assistant Director*

Owen B. Kiernan
Commissioner of Education

Publication Number 271 approved by Alfred C. Holland, State Purchasing Agent.

VT 01024

TAPLE I

SUMMARY BY TYPES OF SCHOOLS

Report of Graduate Placement

Class of 1963-64

Programs	Sex	Total Number of Graduates	Number not presently available for employment			Available for Employment	Number obtaining full-time jobs				Per cent	Median Hourly Wage	Number Employed Part-time	Number Unemployed	Number Status Unknown
			Entered Armed Service	Continued Training in Full-time School	All Other Reasons		In Occupation for Which Trained	In Field Related to Training	In Field Not Related to Training	Total Number Obtaining Full-time Jobs					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALL SCHOOLS	M	2811	394	177	24	2216	1918	76	190	2184	.99	1.58	1	18	13
	F	757	1	16	25	715	623	17	22	662	.93	1.32	21	14	18
BOYS' ALL DAY TRADE AND INDUSTRIAL	M	2053	294	136	21	1602	1337	70	173	1580	.99	1.58	--	13	9
	F	22	--	2	--	20	12	--	1	13	.60	1.15	--	--	7
GIRLS' ALL DAY TRADE AND INDUSTRIAL	M	11	1	--	--	10	9	--	--	9	.90	1.35	--	1	--
	F	308	--	7	12	289	244	13	15	272	.94	1.32	6	5	6
PART-TIME COOPERATIVE TRADE	M	544	68	16	2	458	446	3	8	457	.99	1.50	--	1	--
PRACTICAL NURSING	M	4	--	--	--	4	4	--	--	4	100	1.68	--	--	--
	F	427	1	7	13	406	367	4	6	377	.93	1.50	15	9	5
AREA VOCATIONAL	M	199	31	25	1	142	122	3	9	134	.94	1.75	1	3	4

Massachusetts Summary of Earnings:

Boys - $7,176,624.00
Girls - 1,817,190.00
Total - $8,993,814.00

TABLE II

ALL-DAY TRADE SCHOOLS (BOYS)

Report of Graduate Placements by Schools

Class of 1963-64

Programs 1	Sex 2	Total Number of Graduates 3	Number not presently available for employment: Entered Armed Service 4	Continued Training in Full-time School 5	All Other Reasons 6	Available for Employment 7	Number obtaining full-time jobs: In Occupation for Which Trained 8	In Field Related to Training 9	In Field Not Related to Training 10	Total Number Obtaining Full-time Jobs 11	Per cent 12	Median Hourly Wage 13	Number Employed Part-time 14	Number Unemployed 15	Number Status Unknown 16
ALL SCHOOLS	M	2053	294	136	21	1602	1337	70	173	1580	.99	1.58	--	13	9
	F	22	--	2	--	20	12	--	1	13	.60	1.15	--	--	7
APPONEQUET REGIONAL	M	14	3	2	--	9	8	--	1	9	100	1.65	--	--	--
Machinists		8	2	1	--	5	4	--	1	5	100	1.65	--	--	--
Mechanics (Automotive)		6	1	1	--	4	4	--	--	4	100	1.35	--	--	--
ARLINGTON	M	16	2	3	--	11	11	--	--	11	100	1.60	--	--	--
Machinists		3	1	--	--	2	2	--	--	2	100	1.60	--	--	--
Mechanics (Automotive)		11	1	3	--	7	7	--	--	7	100	1.50	--	--	--
Technicians (Electronics)		2	--	--	--	2	2	--	--	2	100	1.67	--	--	--
ATTLEBORO	M	20	8	1	--	11	10	1	--	11	100	--	--	--	--
Machinists		13	6	1	--	6	5	1	--	6	100	--	--	--	--
Mechanics (Automotive)		7	2	--	--	5	5	--	--	5	100	--	--	--	--
AVON Carpenters	M	6	--	--	--	6	3	--	3	6	100	1.81	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BARNSTABLE	M	13	2	--	--	11	11	--	--	11	100	1.80	--	--	--
Carpenters		4	1	--	--	3	3	--	--	3	100	2.10	--	--	--
Mechanics (Automotive)		6	--	--	--	6	6	--	--	6	100	1.75	--	--	--
Ship Builders		1	--	--	--	1	1	--	--	1	100	1.85	--	--	--
Technicians (Electrical)		2	1	--	--	1	1	--	--	1	100	1.80	--	--	--
BELMONT	M	16	2	2	--	12	10	2	--	12	100	1.95	--	--	--
Cabinetmakers		3	1	1	--	1	1	--	--	1	100	2.75	--	--	--
Machinists		5	--	1	--	4	3	1	--	4	100	2.23	--	--	--
Mechanics (Automotive)		3	1	--	--	2	2	--	--	2	100	1.65	--	--	--
Sheet Metal Workers		3	--	--	--	3	3	--	--	3	100	1.70	--	--	--
Technicians (Electrical)		2	--	--	--	2	1	1	--	2	100	1.95	--	--	--
BEVERLY	M	29	2	1	1	25	24	1	--	25	100	1.60	--	--	--
Cabinetmakers		1	--	--	--	1	--	1	--	1	100	1.80	--	--	--
Carpenters		4	--	--	--	4	4	--	--	4	100	1.85	--	--	--
Machinists		2	--	--	--	2	2	--	--	2	100	1.60	--	--	--
Mechanics (Automotive)		4	--	--	1	3	3	--	--	3	100	1.50	--	--	--
Pattermmakers		5	1	1	--	3	3	--	--	3	100	1.70	--	--	--
Printers		6	1	--	--	5	5	--	--	5	100	1.35	--	--	--
Sheet Metal Workers		7	--	--	--	7	7	--	--	7	100	1.50	--	--	--
BOSTON	M	185	31	14	9	131	96	1	32	129	.98	1.50	--	1	1
Bakers		15	3	--	--	12	10	--	1	11	.92	1.40	--	1	--
Cabinetmakers		16	3	--	--	13	12	--	1	13	100	1.50	--	--	--
Carpenters		8	--	--	--	8	7	--	1	8	100	1.85	--	--	--
Draftsmen		11	1	1	--	9	6	--	3	9	100	1.45	--	--	--
Machinists		19	3	3	1	12	10	--	2	12	100	1.65	--	--	--
Mechanics															
(Airplane)		13	4	2	1	6	--	1	5	6	100	1.45	--	--	--
(Automotive)		22	5	--	2	15	10	--	5	15	100	1.50	--	--	--
Painters		11	2	1	1	7	4	--	3	7	100	2.25	--	--	--
Plumbers		9	2	--	--	7	7	--	--	7	100	1.75	--	--	--
Printers		14	2	1	--	11	8	--	3	11	100	1.50	--	--	--
Sheet Metal Workers		10	1	--	--	9	4	--	5	9	100	1.75	--	--	--
Technicians															
(Electrical)		15	2	1	3	9	9	--	--	9	100	1.90	--	--	--
(Electronics)		16	2	5	1	8	4	--	3	7	.88	1.50	--	--	1
Welders		6	1	--	--	5	5	--	--	5	100	2.33	--	--	--
BROCKTON	M	23	7	1	--	15	15	--	--	15	100	1.72	--	--	--
Cabinetmakers		7	--	1	--	6	6	--	--	6	100	1.50	--	--	--
Machinists		7	3	--	--	4	4	--	--	4	100	1.85	--	--	--
Technicians (Electrical)		9	4	--	--	5	5	--	--	5	100	1.72	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CHICOPEE	M	21	3	2	--	16	13	1	2	16	100	1.35	--	--	--
	F	9	--	1	--	8	6	--	--	6	.75	1.15	--	--	2
Cabinetmakers		2	--	--	--	2	2	--	--	2	100	1.25	--	--	--
Draftsmen		1	--	--	--	1	--	1	--	1	100	1.35	--	--	--
Machinists		6	1	2	--	3	3	--	--	3	100	1.50	--	--	--
Mechanics (Auto, Body, Fender)		1	--	--	--	1	1	--	--	1	100	1.35	--	--	--
(Automotive)		3	--	--	--	3	2	--	1	3	100	1.25	--	--	--
Needle Trades (Power Stitching)	F	9	--	1	--	8	6	--	--	6	.75	1.15	--	--	2
Technicians (Electrical)		5	2	--	--	3	3	--	--	3	100	1.35	--	--	--
Welders		3	--	--	--	3	2	--	1	3	100	1.65	--	--	--
DARTMOUTH															
Mechanics (Automotive)	M	14	2	1	--	11	9	--	2	11	100	1.60	--	--	--
DIGHTON-REHOBOTH REGIONAL	M	14	1	--	--	13	13	--	--	13	100	1.50	--	--	--
Carpenters		8	--	--	--	8	8	--	--	8	100	1.50	--	--	--
Mechanics (Automotive)		6	1	--	--	5	5	--	--	5	100	1.35	--	--	--
EVERETT	M	56	8	1	--	47	41	--	6	47	100	1.50	--	--	--
Cabinetmakers		16	3	--	--	13	9	--	4	13	100	1.45	--	--	--
Machinists		7	2	1	--	4	4	--	--	4	100	1.75	--	--	--
Mechanics (Automotive)		6	2	--	--	4	4	--	--	4	100	1.50	--	--	--
Painters		4	--	--	--	4	4	--	--	4	100	1.50	--	--	--
Printers		8	--	--	--	8	6	--	2	8	100	1.58	--	--	--
Sheet Metal Workers		7	1	--	--	6	6	--	--	6	100	1.40	--	--	--
Technicians (Electrical)		2	--	--	--	2	2	--	--	2	100	1.35	--	--	--
(Electronics)		6	--	--	--	6	6	--	--	6	100	1.65	--	--	--
FALL RIVER	M	69	10	1	--	58	47	--	9	56	.84	1.50	--	--	2
Cabinetmakers		14	1	--	--	13	13	--	--	13	100	1.50	--	--	--
Machinists		19	2	--	--	17	15	--	2	17	100	1.60	--	--	--
Mechanics (Automotive)		15	2	1	--	12	10	--	2	12	100	1.35	--	--	--
Painters		1	--	--	--	1	--	--	1	1	100	1.35	--	--	--
Technicians (Electrical)		20	5	--	--	15	9	--	4	13	.87	1.50	--	--	2
FITCHBURG	M	20	3	4	--	13	9	1	3	13	100	1.60	--	--	--
Carpenters		7	1	1	--	5	3	--	2	5	100	1.60	--	--	--
Machinists		2	--	--	--	2	2	--	--	2	100	1.60	--	--	--
Mechanics (Automotive)		4	1	1	--	2	1	1	--	2	100	1.50	--	--	--
Technicians (Electrical		7	1	2	--	4	3	--	1	4	100	1.55	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
FRAMINGHAM	M	29	7	2	--	20	17	--	1	18	.94	--	--	2	--
Machinists		9	4	1	--	4	4	--	--	4	100	--	--	--	--
Mechanics (Automotive)		5	--	--	--	5	5	--	--	5	100	--	--	--	--
Technicians (Electronics)		15	3	1	--	11	8	--	1	9	.88	--	--	2	--
GLOUCESTER	M	24	3	3	--	18	15	--	3	18	100	1.75	--	--	--
Carpenters		7	1	--	--	6	6	--	--	6	100	1.70	--	--	--
Machinists		7	2	--	--	5	4	--	1	5	100	1.75	--	--	--
Mechanics (Automotive)		5	--	3	--	2	2	--	--	2	100	1.50	--	--	--
Printers		2	--	--	--	2	2	--	--	2	100	1.75	--	--	--
Technicians (Electrical)		3	--	--	--	3	1	--	2	3	100	1.75	--	--	--
GREENFIELD	M	28	8	4	--	16	11	2	3	16	100	--	--	--	--
Carpenters		5	2	--	--	3	3	--	--	3	100	--	--	--	--
Machinists		9	3	1	--	5	5	--	--	5	100	--	--	--	--
Mechanics (Automotive)		12	2	2	--	8	3	2	3	8	100	--	--	--	--
Printers		2	1	1	--	--	--	--	--	--	--	--	--	--	--
HAVERHILL	M	79	5	5	--	69	58	6	4	68	.99	1.45	--	1	--
Carpenters		6	1	2	--	3	3	--	--	3	100	1.45	--	--	--
Machinists		6	--	--	--	6	6	--	--	6	100	1.53	--	--	--
Mechanics (Automotive)		10	1	--	--	9	8	--	1	9	100	1.55	--	--	--
Painters		7	--	--	--	7	6	--	1	7	100	1.40	--	--	--
Plumbers		3	--	1	--	2	2	--	--	2	100	1.35	--	--	--
Printers		7	--	--	--	7	6	--	--	6	.86	1.40	--	1	--
Sheet Metal Workers		13	--	--	--	13	11	2	--	13	100	1.48	--	--	--
Technicians (Electrical)		10	--	1	--	9	7	2	--	9	100	1.47	--	--	--
(Electronics)		11	2	1	--	8	5	2	1	8	100	1.55	--	--	--
Upholsterers		4	1	--	--	3	2	--	1	3	100	1.45	--	--	--
Welders		2	--	--	--	2	2	--	--	2	100	1.35	--	--	--
HOLYOKE	M	27	4	--	--	23	17	4	2	23	100	1.50	--	--	--
Carpenters		2	--	--	--	2	2	--	--	2	100	1.38	--	--	--
Machinists		5	2	--	--	3	2	--	1	3	100	1.45	--	--	--
Mechanics (Automotive)		6	2	--	--	4	2	2	--	4	100	1.55	--	--	--
Printers		4	--	--	--	4	3	1	--	4	100	1.59	--	--	--
Sheet Metal Workers		4	--	--	--	4	2	1	1	4	100	1.83	--	--	--
Technicians (Electrical)		6	--	--	--	6	6	--	--	6	100	1.50	--	--	--
KING PHILIP REGIONAL	M	14	2	--	--	12	10	--	2	12	100	2.00	--	--	--
Carpenters		6	--	--	--	6	5	--	1	6	100	2.00	--	--	--
Machinists		8	2	--	--	6	5	--	1	6	100	1.50	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LEOMINSTER	M	29	4	4	--	21	20	--	--	20	.95	1.75	--	1	--
Carpenters		11	2	3	--	6	5	--	--	5	.83	2.05	--	1	--
Machinists		12	2	1	--	9	9	--	--	9	100	1.75	--	--	--
Mechanics (Automotive)		6	--	--	--	6	6	--	--	6	100	1.50	--	--	--
LOWELL	M	69	12	1	1	55	45	5	5	55	100	1.50	--	--	--
Carpenters		19	3	--	--	16	14	--	2	16	100	1.55	--	--	--
Draftsmen		3	1	--	1	1	1	--	--	1	100	1.40	--	--	--
Machinists		17	1	--	--	16	12	2	2	16	100	1.60	--	--	--
Mechanics (Automotive)		11	2	1	--	8	7	1	--	8	100	1.35	--	--	--
Painters		1	1	--	--	--	--	--	--	--	--	--	--	--	--
Technicians (Electrical)		18	4	--	--	14	11	2	1	14	100	1.50	--	--	--
LYNN SHOE															
Shoemaking and Repair	M	74	--	11	--	63	59	--	2	61	.97	1.60	--	--	2
LYNN TRADE	M	94	10	8	--	76	67	2	6	75	.99	1.50	--	--	1
Cabinetmakers		6	2	--	--	4	3	--	--	3	.75	1.50	--	--	1
Carpenters		8	3	--	--	5	4	--	1	5	100	1.70	--	--	--
Draftsmen		10	1	2	--	7	6	--	1	7	100	1.50	--	--	--
Machinists		37	2	2	--	33	33	--	--	33	100	1.67	--	--	--
Printers		5	1	--	--	4	4	--	--	4	100	1.40	--	--	--
Sheet Metal Workers		12	--	2	--	10	8	1	1	10	100	1.60	--	--	--
Technicians (Electrical)		16	1	2	--	13	9	1	3	13	100	1.30	--	--	--
MALDEN	M	27	3	--	--	24	19	--	5	24	100	1.50	--	--	--
Machinists		6	1	--	--	5	4	--	1	5	100	1.50	--	--	--
Mechanics (Automotive)		6	--	--	--	6	6	--	--	6	100	1.35	--	--	--
Sheet Metal Workers		6	--	--	--	6	6	--	--	6	100	1.50	--	--	--
Technicians (Electrical)		9	2	--	--	7	3	--	4	7	100	1.30	--	--	--
MARLBORO	M	22	3	2	--	17	10	1	6	17	100	1.65	--	--	--
Machinists		13	3	1	--	9	5	--	4	9	100	1.60	--	--	--
Mechanics (Auto, Body, Fender)		5	--	1	--	4	2	--	2	4	100	1.75	--	--	--
(Automotive)		4	--	--	--	4	3	1	--	4	100	1.65	--	--	--
MEDFORD	M	50	8	3	--	39	38	--	1	39	100	1.57	--	--	--
Cabinetmakers		9	1	--	--	8	8	--	--	8	100	1.45	--	--	--
Machinists		11	1	--	--	10	9	--	1	10	100	1.57	--	--	--
Mechanics (Automotive)		8	--	--	--	8	8	--	--	8	100	1.50	--	--	--
Painters		6	2	1	--	3	3	--	--	3	100	1.75	--	--	--
Printers		8	--	1	--	7	7	--	--	7	100	1.59	--	--	--
Sheet Metal Workers		8	4	1	--	3	3	--	--	3	100	1.41	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NANTUCKET															
Carpenters	M	7	1	--	--	6	6	--	--	6	100	--	--	--	--
NEW BEDFORD	M	84	9	4	5	66	57	1	2	60	.91	1.53	--	6	--
Carpenters		19	1	--	--	18	17	--	1	18	100	1.53	--	--	--
Draftsmen		5	2	--	--	3	1	--	--	1	.33	2.44	--	2	--
Machinists		18	--	--	2	16	15	--	--	15	.94	1.68	--	1	--
Mechanics (Automotive)		11	--	--	--	11	11	--	--	11	100	1.42	--	--	--
Technicians (Electrical)		12	1	3	1	7	5	1	--	6	.86	1.53	--	1	--
(Engineers, Power)		5	1	--	--	4	3	--	1	4	100	1.71	--	--	--
(Industrial Design)		6	3	--	2	1	--	--	--	--	--	--	--	1	--
Welders		8	1	1	--	6	5	--	--	5	.83	1.52	--	1	--
NEW SALEM															
Mechanics (Automotive)	M	4	--	--	--	4	3	1	--	4	100	1.40	--	--	--
NEWTON	M	56	4	3	--	49	37	3	9	49	100	1.60	--	--	--
Carpenters		15	1	1	--	13	11	--	2	13	100	1.60	--	--	--
Draftsmen		5	--	1	--	4	2	2	--	4	100	1.65	--	--	--
Machinists		4	--	1	--	3	1	--	2	3	100	1.45	--	--	--
Mechanics (Automotive)		10	--	--	--	10	8	--	2	10	100	1.45	--	--	--
Printers		4	2	--	--	2	2	--	--	2	100	1.55	--	--	--
Sheet Metal Workers		2	--	--	--	2	2	--	--	2	100	1.75	--	--	--
Technicians (Electrical)		8	--	--	--	8	8	--	--	8	100	1.55	--	--	--
(Electronics)		8	1	--	--	7	3	1	3	7	100	1.60	--	--	--
NORTH ADAMS -	M	12	4	--	1	7	--	7	--	7	100	1.70	--	--	--
CHARLES H. MC CANN	F	11	--	1	--	10	4	--	1	5	.50	1.00	--	--	5
Beauty Operator	F	10	--	--	--	10	4	--	1	5	.50	1.00	--	--	5
Food Trades	F	1	--	1	--	--	--	--	--	--	--	--	--	--	--
Drafting		1	--	--	1	--	--	--	--	--	--	--	--	--	--
Machinists		8	1	--	--	7	--	7	--	7	100	1.70	--	--	--
Technicians (Electrical)		1	1	--	--	--	--	--	--	--	--	--	--	--	--
(Electronics)		2	2	--	--	--	--	--	--	--	--	--	--	--	--
NORTHAMPTON	M	56	7	2	--	47	39	4	3	46	.98	1.60	--	--	1
Carpenters		10	1	--	--	9	8	1	--	9	100	1.50	--	--	--
Draftsmen		8	--	1	--	7	6	1	--	7	100	1.60	--	--	--
Machinists		9	3	1	--	5	5	--	--	5	100	1.75	--	--	--
Mechanics (Auto, Body, Fender)		6	--	--	--	6	6	--	--	6	100	1.92	--	--	--
(Automotive)		9	1	--	--	8	7	--	1	8	100	1.50	--	--	--
Painters		3	--	--	--	3	--	--	2	2	.67	1.30	--	--	1
Sheet Metal Workers		3	--	--	--	3	3	--	--	3	100	2.00	--	--	--
Technicians (Electrical)		8	2	--	--	6	4	2	--	6	100	1.40	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PEABODY	M	7	1	1	--	5	4	--	--	4	.80	1.75	--	1	--
Machinists		4	1	--	--	3	2	--	--	2	.67	2.30	--	1	--
Mechanics (Automotive)		3	--	1	--	2	2	--	--	2	100	1.75	--	--	--
PITTSFIELD	M	48	19	3	--	26	20	2	4	26	100	1.50	--	--	--
Carpentry		8	2	1	--	5	2	2	1	5	100	1.50	--	--	--
Machinists		13	7	--	--	6	4	--	2	6	100	1.75	--	--	--
Mechanics (Auto, Body, Fender)		2	--	1	--	1	--	--	1	1	100	1.50	--	--	--
(Automotive)		5	1	--	--	4	4	--	--	4	100	1.50	--	--	--
Printers		10	4	1	--	5	5	--	--	5	100	1.45	--	--	--
Sheet Metal Workers		6	2	--	--	4	4	--	--	4	100	1.60	--	--	--
Welders		4	3	--	--	1	1	--	--	1	100	1.50	--	--	--
PROVINCETOWN															
Mechanics (Automotive)	M	6	--	2	--	4	2	--	2	4	100	1.58	--	--	--
QUINCY	M	65	16	9	--	40	33	4	2	39	.98	1.50	--	--	1
Cabinetmakers		5	4	--	--	1	1	--	--	1	100	1.25	--	--	--
Machinists		5	3	1	--	1	1	--	--	1	100	1.50	--	--	--
Mechanics (Auto, Body, Fender)		6	--	--	--	6	5	1	--	6	100	1.75	--	--	--
(Automotive)		5	2	--	--	3	3	--	--	3	100	1.65	--	--	--
Patternmakers		3	--	--	--	3	3	--	--	3	100	1.50	--	--	--
Plumbers		8	1	--	--	7	7	--	--	7	100	1.50	--	--	--
Sheet Metal Workers		7	--	--	--	7	4	3	--	7	100	1.75	--	--	--
Technicians (Electrical)		13	5	--	--	8	5	--	2	7	.88	1.50	--	--	1
(Electronics)		13	1	8	--	4	4	--	--	4	100	1.75	--	--	--
RANDOLPH															
Mechanics (Automotive)	M	6	1	--	--	5	4	--	1	5	100	1.60	--	--	--
SALEM	M	31	5	7	--	19	10	--	8	18	.95	1.50	--	--	1
Machinists		9	2	1	--	6	2	--	4	6	100	1.50	--	--	--
Mechanics (Automotive)		6	--	1	--	5	4	--	1	5	100	1.45	--	--	--
Technicians (Electrical)		13	3	2	--	8	4	--	3	7	100	1.60	--	--	1
(Electronics)		3	--	3	--	--	--	--	--	--	--	--	--	--	--
SILVER LAKE REGIONAL	M	13	1	1	--	11	11	--	--	11	100	1.80	--	--	--
Carpenters		8	1	1	--	6	6	--	--	6	100	1.80	--	--	--
Mechanics (Automotive)		5	--	--	--	5	5	--	--	5	100	1.65	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SOMERVILLE	M	45	8	1	--	36	31	--	5	36	100	1.50	--	--	--
Carpenters		7	2	--	--	5	4	--	1	5	100	1.46	--	--	--
Draftsmen		3	1	1	--	1	1	--	--	1	100	1.50	--	--	--
Machinists		5	2	--	--	3	3	--	--	3	100	1.55	--	--	--
Mechanics (Automotive)		10	1	--	--	9	8	--	1	9	100	1.42	--	--	--
Painters		2	--	--	--	2	2	--	--	2	100	2.00	--	--	--
Printers		6	2	--	--	4	2	--	2	4	100	1.43	--	--	--
Sheet Metal Workers		2	--	--	--	2	1	--	1	2	100	1.50	--	--	--
Technicians (Electrical)		10	--	--	--	10	10	--	--	10	100	1.35	--	--	--
SOUTHBRIDGE	M	9	--	2	--	7	3	1	3	7	100	1.35	--	--	--
Draftsmen		5	--	1	--	4	2	--	2	4	100	1.40	--	--	--
Machinists		2	--	--	--	2	1	--	1	2	100	1.34	--	--	--
Sheet Metal Workers		2	--	1	--	1	--	1	--	1	100	1.35	--	--	--
SOUTH SHORE															
Mechanics (Automotive)	M	7	--	--	--	7	6	1	--	7	100	1.73	--	--	--
SPRINGFIELD	M	202	10	9	--	183	155	7	21	183	100	1.35	--	--	--
	F	2	--	--	--	2	2	--	--	2	100	1.30	--	--	--
Cabinetmakers		14	1	--	--	13	12	--	1	13	100	1.35	--	--	--
Draftsmen		7	--	--	--	7	7	--	--	7	100	1.40	--	--	--
Machinists		38	1	--	--	37	35	--	2	37	100	1.45	--	--	--
Mechanics (Auto, Body, Fender)		5	--	--	--	5	5	--	--	5	100	1.35	--	--	--
(Automotive)		14	1	1	--	12	11	--	1	12	100	1.30	--	--	--
(Diesel)		5	--	--	--	5	4	--	1	5	100	1.35	--	--	--
Painters		5	--	2	--	3	3	--	--	3	100	1.35	--	--	--
Patternmakers		5	--	--	--	5	5	--	--	5	100	1.35	--	--	--
Printers	M	22	1	--	--	21	19	--	2	21	100	1.35	--	--	--
	F	2	--	--	--	2	2	--	--	2	100	1.30	--	--	--
Sheet Metal Workers		6	--	--	--	6	3	--	3	6	100	1.35	--	--	--
Technicians (Electrical)		39	4	2	--	33	29	2	2	33	100	1.35	--	--	--
(Electronics)		35	2	4	--	29	16	5	8	29	100	1.35	--	--	--
Welders		7	--	--	--	7	6	--	1	7	100	1.40	--	--	--
SWANSEA															
Mechanics (Automotive)	M	3	2	--	--	1	1	--	--	1	100	1.30	--	--	--
TAUNTON	M	16	1	--	--	15	15	--	--	15	100	1.38	--	--	--
Machinists		4	--	--	--	4	4	--	--	4	100	1.69	--	--	--
Mechanics (Automotive)		8	1	--	--	7	7	--	--	7	100	1.35	--	--	--
Sheet Metal Workers		4	--	--	--	4	4	--	--	4	100	1.38	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
WALTHAM	M	66	14	4	--	48	45	--	3	48	100	1.75	--	--	--
Carpenters		6	3	--	--	3	2	--	1	3	100	1.84	--	--	--
Draftsmen		2	1	--	--	1	1	--	--	1	100	1.50	--	--	--
Machinists		14	3	1	--	10	9	--	1	10	100	1.75	--	--	--
Mechanics (Auto, Body, Fender)		7	--	--	--	7	7	--	--	7	100	1.72	--	--	--
(Automotive)		15	3	--	--	12	11	--	1	12	100	1.62	--	--	--
Printers		9	2	1	--	6	6	--	--	6	100	1.60	--	--	--
Technicians (Electronics)		10	1	2	--	7	7	--	--	7	100	1.77	--	--	--
Welders		3	1	--	--	2	2	--	--	2	100	2.18	--	--	--
WAREHAM															
Mechanics (Automotive)	M	5	--	1	--	4	3	1	--	4	100	1.50	--	--	--
WEBSTER	M	22	6	--	--	16	9	--	6	15	.94	1.68	--	1	--
Carpenters		3	1	--	--	2	--	--	2	2	100	1.68	--	--	--
Mechanics (Automotive)		10	3	--	--	7	3	--	4	7	100	1.60	--	--	--
Technicians (Electrical)		9	2	--	--	7	6	--	--	6	.86	1.68	--	1	--
WESTFIELD	M	11	3	1	--	7	1	2	4	7	100	1.50	--	--	--
Draftsmen		4	1	1	--	2	--	1	1	2	100	1.35	--	--	--
Machinists		4	2	--	--	2	--	1	1	2	100	1.50	--	--	--
Mechanics (Automotive)		2	--	--	--	2	--	--	2	2	100	1.40	--	--	--
Technicians (Electrical)		1	--	--	--	1	1	--	--	1	100	1.50	--	--	--
WEYMOUTH	M	68	11	4	4	49	44	5	--	49	100	1.53	--	--	--
Cabinetmakers		13	2	1	--	10	6	4	--	10	100	1.53	--	--	--
Carpenters		18	2	1	2	13	12	1	--	13	100	1.63	--	--	--
Mechanics (Automotive)		10	3	--	--	7	7	--	--	7	100	1.50	--	--	--
Printers		11	2	1	1	7	7	--	--	7	100	1.56	--	--	--
Sheet Metal Workers		16	2	1	1	12	12	--	--	12	100	1.39	--	--	--
WORCESTER	M	122	18	6	--	98	92	4	2	98	100	1.75	--	--	--
Cabinetmakers		8	2	--	--	6	6	--	--	6	100	1.60	--	--	--
Carpenters		10	2	--	--	8	8	--	--	8	100	1.70	--	--	--
Machinists		37	4	1	--	32	32	--	--	32	100	1.95	--	--	--
Mechanics (Automotive)		22	5	1	--	16	11	3	2	16	100	1.75	--	--	--
Painters		6	--	--	--	6	6	--	--	6	100	1.75	--	--	--
Patternmakers		4	--	1	--	3	2	1	--	3	100	1.75	--	--	--
Plumbers		5	--	1	--	4	4	--	--	4	100	1.80	--	--	--
Printers		7	1	1	--	5	5	--	--	5	100	1.75	--	--	--
Sheet Metal Workers		4	--	--	--	4	4	--	--	4	100	2.00	--	--	--
Technicians (Electrical)		14	4	1	--	9	9	--	--	9	100	1.65	--	--	--
Welders		5	--	--	--	5	5	--	--	5	100	2.10	--	--	--

TABLE III

ALL-DAY TRADE SCHOOLS (BOYS)

Report of Graduate Placements by Trades

Class of 1963-64

Programs	Sex	Total Number of Graduates	Number not presently available for employment			Available for Employment	Number obtaining full-time jobs				Per cent	Median Hourly Wage	Number Employed Part-time	Number Unemployed	Number Status Unknown
			Entered Armed Service	Continued Training in Full-time School	All Other Reasons		In Occupation for Which Trained	In Field Related to Training	In Field Not Related to Training	Total Number Obtaining Full-time Jobs					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALL TRADES	M	2053	294	136	21	1602	1337	70	173	1580	.99	1.58	--	13	9
	F	22	--	2	--	20	12	--	1	13	.60	1.15	--	--	7
BAKERS															
Boston	M	15	3	--	--	12	10	--	1	11	.92	1.40	--	1	--
BEAUTY OPERATOR															
North Adams - Charles H. McCann	F	10	--	--	--	10	4	--	1	5	.50	1.00	--	--	5
CABINETMAKERS	M	114	20	3	--	91	79	5	6	90	.99	1.50	--	--	1
Belmont		3	1	1	--	1	1	--	--	1	100	2.75	--	--	--
Beverly		1	--	--	--	1	--	1	--	1	100	1.80	--	--	--
Boston		16	3	--	--	13	12	--	1	13	100	1.50	--	--	--
Brockton		7	--	1	--	6	6	--	--	6	100	1.50	--	--	--
Chicopee		2	--	--	--	2	2	--	--	2	100	1.25	--	--	--
Everett		16	3	--	--	13	9	--	4	13	100	1.45	--	--	--
Fall River		14	1	--	--	13	13	--	--	13	100	1.50	--	--	--
Lynn		6	2	--	--	4	3	--	--	3	.75	1.50	--	--	1
Medford		9	1	--	--	8	8	--	--	8	100	1.45	--	--	--
Quincy		5	4	--	--	1	1	--	--	1	100	1.25	--	--	--
Springfield		14	1	--	--	13	12	--	1	13	100	1.35	--	--	--
Weymouth		13	2	1	--	10	6	4	--	10	100	1.53	--	--	--
Worcester		8	2	--	--	6	6	--	--	6	100	1.60	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CARPENTERS	M	212	31	10	2	169	146	4	18	168	.99	1.68	--	1	--
Avon		6	--	--	--	6	3	--	3	6	100	1.81	--	--	--
Barnstable		4	1	--	--	3	3	--	--	3	100	2.10	--	--	--
Beverly		4	--	--	--	4	4	--	--	4	100	1.85	--	--	--
Boston		8	--	--	--	8	7	--	1	8	100	1.89	--	--	--
Dighton-Rehoboth		8	--	--	--	8	8	--	--	8	100	1.50	--	--	--
Fitchburg		7	1	1	--	5	3	--	2	5	100	1.60	--	--	--
Gloucester		7	1	--	--	6	6	--	--	6	100	1.70	--	--	--
Greenfield		5	2	--	--	3	3	--	--	3	100	--	--	--	--
Haverhill		6	1	2	--	3	3	--	--	3	100	1.45	--	--	--
Holyoke		2	--	--	--	2	2	--	--	2	100	1.38	--	--	--
King Philip		6	--	--	--	6	5	--	1	6	100	2.00	--	--	--
Leominster		11	2	3	--	6	5	--	--	5	.83	2.05	--	1	--
Lowell		19	3	--	--	16	14	--	2	16	100	1.55	--	--	--
Lynn		8	3	--	--	5	4	--	1	5	100	1.70	--	--	--
Nantucket		7	1	--	--	6	6	--	--	6	100	--	--	--	--
New Bedford		19	1	--	--	18	17	--	1	18	100	1.53	--	--	--
Newton		15	1	1	--	13	11	--	2	13	100	1.60	--	--	--
Northampton		10	1	--	--	9	8	1	--	9	100	1.50	--	--	--
Pittsfield		8	2	1	--	5	2	2	1	5	100	1.50	--	--	--
Silver Lake		8	1	1	--	6	6	--	--	6	100	1.80	--	--	--
Somerville		7	2	--	--	5	4	--	1	5	100	1.46	--	--	--
Waltham		6	3	--	--	3	2	--	1	3	100	1.84	--	--	--
Webster		3	1	--	--	2	--	--	2	2	100	1.68	--	--	--
Weymouth		18	2	1	2	13	12	1	--	13	100	1.63	--	--	--
Worcester		10	2	--	--	8	8	--	--	8	100	1.70	--	--	--
DRAFTSMEN	M	65	8	8	2	47	33	5	7	45	.96	1.50	--	2	--
Boston		11	1	1	--	9	6	--	3	9	100	1.45	--	--	--
Chicopee		1	--	--	--	1	--	1	--	1	100	1.35	--	--	--
Lowell		3	1	--	1	1	1	--	--	1	100	1.40	--	--	--
Lynn		10	1	2	--	7	6	--	1	7	100	1.50	--	--	--
New Bedford		5	2	--	--	3	1	--	--	1	.33	2.44	--	2	--
Newton		5	--	1	--	4	2	2	--	4	100	1.65	--	--	--
North Adams - Charles H. McCann		1	--	--	1	--	--	--	--	--	--	--	--	--	--
Northampton		8	--	1	--	7	6	1	--	7	100	1.60	--	--	--
Somerville		3	1	1	--	1	1	--	--	1	100	1.50	--	--	--
Southbridge		5	--	1	--	4	2	--	2	4	100	1.40	--	--	--
Springfield		7	--	--	--	7	7	--	--	7	100	1.40	--	--	--
Waltham		2	1	--	--	1	1	--	--	1	100	1.50	--	--	--
Westfield		4	1	1	--	2	--	1	1	2	100	1.35	--	--	--
FOOD SERVICE															
North Adams - Charles H. McCann	F	1	--	1	--	--	--	--	--	--	--	--	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MACHINISTS	M	405	72	21	3	309	266	12	29	307	.99	1.60	--	2	--
Apponequet Regional		8	2	1	--	5	4	--	1	5	100	1.65	--	--	--
Arlington		3	1	--	--	2	2	--	--	2	100	1.60	--	--	--
Attleboro		13	6	1	--	6	5	1	--	6	100	--	--	--	--
Belmont		5	--	1	--	4	3	1	--	4	100	2.23	--	--	--
Beverly		2	--	--	--	2	2	--	--	2	100	1.60	--	--	--
Boston		19	3	3	1	12	10	--	2	12	100	1.65	--	--	--
Brockton		7	3	--	--	4	4	--	--	4	100	1.85	--	--	--
Chicopee		6	1	2	--	3	3	--	--	3	100	1.50	--	--	--
Everett		7	2	1	--	4	4	--	--	4	100	1.75	--	--	--
Fall River		19	2	--	--	17	15	--	2	17	100	1.60	--	--	--
Fitchburg		2	--	--	--	2	2	--	--	2	100	1.60	--	--	--
Framingham		9	4	1	--	4	4	--	--	4	100	--	--	--	--
Gloucester		7	2	--	--	5	4	--	1	5	100	1.75	--	--	--
Greenfield		9	3	1	--	5	5	--	--	5	100	--	--	--	--
Haverhill		6	--	--	--	6	6	--	--	6	100	1.53	--	--	--
Holyoke		5	2	--	--	3	2	--	1	3	100	1.45	--	--	--
King Philip		8	2	--	--	6	5	--	1	6	100	1.50	--	--	--
Leominster		12	2	1	--	9	9	--	--	9	100	1.75	--	--	--
Lowell		17	1	--	--	16	12	2	2	16	100	1.60	--	--	--
Lynn		37	2	2	--	33	33	--	--	33	100	1.67	--	--	--
Malden		6	1	--	--	5	4	--	1	5	100	1.50	--	--	--
Marlboro		13	3	1	--	9	5	--	4	9	100	1.60	--	--	--
Medford		11	1	--	--	10	9	--	1	10	100	1.57	--	--	--
New Bedford		18	--	--	2	16	15	--	--	15	.94	1.68	--	1	--
Newton		4	--	1	--	3	1	--	2	3	100	1.45	--	--	--
North Adams - Charles H. McCann		8	1	--	--	7	--	7	--	7	100	1.70	--	--	--
Northampton		9	3	1	--	5	5	--	--	5	100	1.75	--	--	--
Peabody		4	1	--	--	3	2	--	--	2	.67	2.30	--	1	--
Pittsfield		13	7	--	--	6	4	--	2	6	100	1.75	--	--	--
Quincy		5	3	1	--	1	1	--	--	1	100	1.50	--	--	--
Salem		9	2	1	--	6	2	--	4	6	100	1.50	--	--	--
Somerville		5	2	--	--	3	3	--	--	3	100	1.55	--	--	--
Southbridge		2	--	--	--	2	1	--	1	2	100	1.35	--	--	--
Springfield		38	1	--	--	37	35	--	2	37	100	1.45	--	--	--
Taunton		4	--	--	--	4	4	--	--	4	100	1.69	--	--	--
Waltham		14	3	1	--	10	9	--	1	10	100	1.75	--	--	--
Westfield		4	2	--	--	2	--	1	1	2	100	1.50	--	--	--
Worcester		37	4	1	--	32	32	--	--	32	100	1.95	--	--	--
MECHANICS (AIRPLANE)															
Boston	M	13	4	2	1	6	--	1	5	6	100	1.45	--	--	--
MECHANICS (AUTO, BODY, FENDER)	M	32	--	2	--	30	26	1	3	30	100	1.72	--	--	--
Chicopee		1	--	--	--	1	1	--	--	1	100	1.35	--	--	--
Marlboro		5	--	1	--	4	2	--	2	4	100	1.75	--	--	--
Northampton		6	--	--	--	6	6	--	--	6	100	1.92	--	--	--
Pittsfield		2	--	1	--	1	--	--	1	1	100	1.50	--	--	--
Quincy		6	--	--	--	6	5	1	--	6	100	1.75	--	--	--
Springfield		5	--	--	--	5	5	--	--	5	100	1.35	--	--	--
Waltham		7	--	--	--	7	7	--	--	7	100	1.72	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MECHANICS (AUTOMOTIVE)	M	356	49	20	3	284	239	13	32	284	100	1.50	--	--	--
Apponequet Regional		6	1	1	--	4	4	--	--	4	100	1.35	--	--	--
Arlington		11	1	3	--	7	7	--	--	7	100	1.50	--	--	--
Attleboro		7	2	--	--	5	5	--	--	5	100	--	--	--	--
Barnstable		6	--	--	--	6	6	--	--	6	100	1.75	--	--	--
Belmont		3	1	--	--	2	2	--	--	2	100	1.65	--	--	--
Beverly		4	--	--	1	3	3	--	--	3	100	1.50	--	--	--
Boston		22	5	--	2	15	10	--	5	15	100	1.50	--	--	--
Chicopee		3	--	--	--	3	2	--	1	3	100	1.25	--	--	--
Dartmouth		14	2	1	--	11	9	--	2	11	100	1.60	--	--	--
Dighton-Rehoboth		6	1	--	--	5	5	--	--	5	100	1.35	--	--	--
Everett		6	2	--	--	4	4	--	--	4	100	1.50	--	--	--
Fall River		15	2	1	--	12	10	--	2	12	100	1.35	--	--	--
Fitchburg		4	1	1	--	2	1	1	--	2	100	1.50	--	--	--
Framingham		5	--	--	--	5	5	--	--	5	100	--	--	--	--
Gloucester		5	--	3	--	2	2	--	--	2	100	1.50	--	--	--
Greenfield		12	2	2	--	8	3	2	3	8	100	--	--	--	--
Haverhill		10	1	--	--	9	8	--	1	9	100	1.55	--	--	--
Holyoke		6	2	--	--	4	2	2	--	4	100	1.55	--	--	--
Leominster		6	--	--	--	6	6	--	--	6	100	1.50	--	--	--
Lowell		11	2	1	--	8	7	1	--	8	100	1.35	--	--	--
Malden		6	--	--	--	6	6	--	--	6	100	1.35	--	--	--
Marlboro		4	--	--	--	4	3	1	--	4	100	1.65	--	--	--
Medford		8	--	--	--	8	8	--	--	8	100	1.50	--	--	--
New Bedford		11	--	--	--	11	11	--	--	11	100	1.42	--	--	--
New Salem		4	--	--	--	4	3	1	--	4	100	1.40	--	--	--
Newton		10	--	--	--	10	8	--	2	10	100	1.45	--	--	--
Northampton		9	1	--	--	8	7	--	1	8	100	1.50	--	--	--
Peabody		3	--	1	--	2	2	--	--	2	100	1.75	--	--	--
Pittsfield		5	1	--	--	4	4	--	--	4	100	1.50	--	--	--
Provincetown		6	--	2	--	4	2	--	2	4	100	1.58	--	--	--
Quincy		5	2	--	--	3	3	--	--	3	100	1.65	--	--	--
Randolph		6	1	--	--	5	4	--	1	5	100	1.60	--	--	--
Salem		6	--	1	--	5	4	--	1	5	100	1.45	--	--	--
Silver Lake		5	--	--	--	5	5	--	--	5	100	1.65	--	--	--
Somerville		10	1	--	--	9	8	--	1	9	100	1.42	--	--	--
South Shore		7	--	--	--	7	6	1	--	7	100	1.73	--	--	--
Springfield		14	1	1	--	12	11	--	1	12	100	1.30	--	--	--
Swansea		3	2	--	--	1	1	--	--	1	100	1.30	--	--	--
Taunton		8	1	--	--	7	7	--	--	7	100	1.35	--	--	--
Waltham		15	3	--	--	12	11	--	1	12	100	1.62	--	--	--
Wareham		5	--	1	--	4	3	1	--	4	100	1.50	--	--	--
Webster		10	3	--	--	7	3	--	4	7	100	1.68	--	--	--
Westfield		2	--	--	--	2	--	--	2	2	100	1.40	--	--	--
Weymouth		10	3	--	--	7	7	--	--	7	100	1.50	--	--	--
Worcester		22	5	1	--	16	11	3	2	16	100	1.75	--	--	--
MECHANICS (DIESEL)															
Springfield	M	5	--	--	--	5	4	--	1	5	100	1.35	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NEEDLE TRADES (POWER STITCHING)															
Chicopee	F	9	--	1	--	8	6	--	--	6	.75	1.15	--	--	2
PAINTERS	M	46	5	4	1	36	28	--	7	35	.97	1.50	--	--	1
Boston		11	2	1	1	7	4	--	3	7	100	2.25	--	--	--
Everett		4	--	--	--	4	4	--	--	4	100	1.50	--	--	--
Fall River		1	--	--	--	1	--	--	1	1	100	1.35	--	--	--
Haverhill		7	--	--	--	7	6	--	1	7	100	1.40	--	--	--
Lowell		1	1	--	--	--	--	--	--	--	--	--	--	--	--
Medford		6	2	1	--	3	3	--	--	3	100	1.75	--	--	--
Northampton		3	--	--	--	3	--	--	2	2	.67	1.30	--	--	1
Somerville		2	--	--	--	2	2	--	--	2	100	2.00	--	--	--
Springfield		5	--	2	--	3	3	--	--	3	100	1.35	--	--	--
Worcester		6	--	--	--	6	6	--	--	6	100	1.75	--	--	--
PATTERNMAKERS	M	17	1	2	--	14	13	1	--	14	100	1.50	--	--	--
Beverly		5	1	1	--	3	3	--	--	3	100	1.70	--	--	--
Quincy		3	--	--	--	3	3	--	--	3	100	1.50	--	--	--
Springfield		5	--	--	--	5	5	--	--	5	100	1.35	--	--	--
Worcester		4	--	1	--	3	2	1	--	3	100	1.75	--	--	--
PLUMBERS	M	25	3	2	--	20	20	--	--	20	100	1.50	--	--	--
Boston		9	2	--	--	7	7	--	--	7	100	1.75	--	--	--
Haverhill		3	--	1	--	2	2	--	--	2	100	1.35	--	--	--
Quincy		8	1	--	--	7	7	--	--	7	100	1.50	--	--	--
Worcester		5	--	1	--	4	4	--	--	4	100	1.80	--	--	--
PRINTERS	M	125	19	7	1	98	87	1	9	97	.99	1.55	--	1	--
	F	2	--	--	--	2	2	--	--	2	100	1.30	--	--	--
Beverly		6	1	--	--	5	5	--	--	5	100	1.35	--	--	--
Boston		14	2	1	--	11	8	--	3	11	100	1.50	--	--	--
Everett		8	--	--	--	8	6	--	2	8	100	1.58	--	--	--
Gloucester		2	--	--	--	2	2	--	--	2	100	1.75	--	--	--
Greenfield		2	1	1	--	--	--	--	--	--	--	--	--	--	--
Haverhill		7	--	--	--	7	6	--	--	6	.86	1.40	--	1	--
Holyoke		4	--	--	--	4	3	1	--	4	100	1.59	--	--	--
Lynn		5	1	--	--	4	4	--	--	4	100	1.40	--	--	--
Medford		8	--	1	--	7	7	--	--	7	100	1.59	--	--	--
Newton		4	2	--	--	2	2	--	--	2	100	1.55	--	--	--
Pittsfield		10	4	1	--	5	5	--	--	5	100	1.45	--	--	--
Somerville		6	2	--	--	4	2	--	2	4	100	1.43	--	--	--
Springfield	M	22	1	--	--	21	19	--	2	21	100	1.35	--	--	--
	F	2	--	--	--	2	2	--	--	2	100	1.30	--	--	--
Waltham		9	2	1	--	6	6	--	--	6	100	1.60	--	--	--
Weymouth		11	2	1	1	7	7	--	--	7	100	1.56	--	--	--
Worcester		7	1	1	--	5	5	--	--	5	100	1.75	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SHEET METAL WORKERS	M	122	10	5	1	106	87	8	11	106	100	1.50	--	--	--
Belmont		3	--	--	--	3	3	--	--	3	100	1.70	--	--	--
Beverly		7	--	--	--	7	7	--	--	7	100	1.50	--	--	--
Boston		10	1	--	--	9	4	--	5	9	100	1.75	--	--	--
Everett		7	1	--	--	6	6	--	--	6	100	1.40	--	--	--
Haverhill		13	--	--	--	13	11	2	--	13	100	1.48	--	--	--
Holyoke		4	--	--	--	4	2	1	1	4	100	1.83	--	--	--
Lynn		12	--	2	--	10	8	1	1	10	100	1.60	--	--	--
Malden		6	--	--	--	6	6	--	--	6	100	1.50	--	--	--
Medford		8	4	1	--	3	3	--	--	3	100	1.41	--	--	--
Newton		2	--	--	--	2	2	--	--	2	100	1.75	--	--	--
Northampton		3	--	--	--	3	3	--	--	3	100	2.00	--	--	--
Pittsfield		6	2	--	--	4	4	--	--	4	100	1.60	--	--	--
Quincy		7	--	--	--	7	4	3	--	7	100	1.75	--	--	--
Somerville		2	--	--	--	2	1	--	1	2	100	1.50	--	--	--
Southbridge		2	--	1	--	1	--	1	--	1	100	1.35	--	--	--
Springfield		6	--	--	--	6	3	--	3	6	100	1.35	--	--	--
Taunton		4	--	--	--	4	4	--	--	4	100	1.38	--	--	--
Weymouth		16	2	1	1	12	12	--	--	12	100	1.39	--	--	--
Worcester		4	--	--	--	4	4	--	--	4	100	2.00	--	--	--
SHIP BUILDERS															
Barnstable	M	1	--	--	--	1	1	--	--	1	100	1.80	--	--	--
SHOEMAKING AND REPAIR															
Lynn	M	74	--	11	--	63	59	--	2	61	.97	1.60	--	--	2
TECHNICIANS (ELECTRICAL)	M	252	44	14	4	190	151	11	22	184	.97	1.50	--	2	4
Barnstable		2	1	--	--	1	1	--	--	1	100	1.80	--	--	--
Belmont		2	--	--	--	2	1	1	--	2	100	1.95	--	--	--
Boston		15	2	1	3	9	9	--	--	9	100	1.90	--	--	--
Brockton		9	4	--	--	5	5	--	--	5	100	1.72	--	--	--
Chicopee		5	2	--	--	3	3	--	--	3	100	1.35	--	--	--
Everett		2	--	--	--	2	2	--	--	2	100	1.35	--	--	--
Fall River		20	5	--	--	15	9	--	4	13	.87	1.50	--	--	2
Fitchburg		7	1	2	--	4	3	--	1	4	100	1.55	--	--	--
Gloucester		3	--	--	--	3	1	--	2	3	100	1.75	--	--	--
Haverhill		10	--	1	--	9	7	2	--	9	100	1.47	--	--	--
Holyoke		6	--	--	--	6	6	--	--	6	100	1.50	--	--	--
Lowell		18	4	--	--	14	11	2	1	14	100	1.50	--	--	--
Lynn		16	1	2	--	13	9	1	3	13	100	1.30	--	--	--
Malden		9	2	--	--	7	3	--	4	7	100	1.30	--	--	--
New Bedford		12	1	3	1	7	5	1	--	6	.86	1.53	--	I	--
Newton		8	--	--	--	8	8	--	--	8	100	1.55	--	--	--
North Adams - Charles H. McCann		1	1	--	--	--	--	--	--	--	--	--	--	--	--
Northampton		8	2	--	--	6	4	2	--	6	100	1.40	--	--	--
Quincy		13	5	--	--	8	5	--	2	7	.87	1.50	--	--	1
Salem		13	3	2	--	8	4	--	3	7	.87	1.60	--	--	1
Somerville		10	--	--	--	10	10	--	--	10	100	1.35	--	--	--
Springfield		39	4	2	--	33	29	2	2	33	100	1.35	--	--	--
Webster		9	2	--	--	7	6	--	--	6	.86	1.68	--	1	--
Westfield		1	--	--	--	1	1	--	--	1	100	1.50	--	--	--
Worcester		14	4	1	--	9	9	--	--	9	100	1.65	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TECHNICIANS (ELECTRONICS)	M	121	14	24	1	82	55	8	16	79	.96	1.60	--	2	1
Arlington		2	--	--	--	2	2	--	--	2	100	1.67	--	--	--
Boston		16	2	5	1	8	4	--	3	7	.88	1.50	--	--	1
Everett		6	--	--	--	6	6	--	--	6	100	1.65	--	--	--
Framingham		15	3	1	--	11	8	--	1	9	.88	--	--	2	--
Haverhill		11	2	1	--	8	5	2	1	8	100	1.55	--	--	--
Newton		8	1	--	--	7	3	1	3	7	100	1.60	--	--	--
North Adams - Charles H. McCann		2	2	--	--	--	--	--	--	--	--	--	--	--	--
Quincy		13	1	8	--	4	4	--	--	4	100	1.75	--	--	--
Salem		3	--	3	--	--	--	--	--	--	--	--	--	--	--
Springfield		35	2	4	--	29	16	5	8	29	100	1.35	--	--	--
Waltham		10	1	2	--	7	7	--	--	7	100	1.77	--	--	--
TECHNICIANS (ENGINEERS, POWER)															
New Bedford	M	5	1	--	--	4	3	--	1	4	100	1.71	--	--	--
TECHNICIANS (INDUSTRIAL DESIGN)															
New Bedford	M	6	3	--	2	1	--	--	--	--	--	--	--	1	--
UPHOLSTERERS															
Haverhill	M	4	1	--	--	3	2	--	1	3	100	1.45	--	--	--
WELDERS	M	38	6	1	--	31	28	--	2	30	.97	1.52	--	1	--
Boston		6	1	--	--	5	5	--	--	5	100	2.33	--	--	--
Chicopee		3	--	--	--	3	2	--	1	3	100	1.65	--	--	--
Haverhill		2	--	--	--	2	2	--	--	2	100	1.35	--	--	--
New Bedford		8	1	1	--	6	5	--	--	5	.83	1.52	--	1	--
Pittsfield		4	3	--	--	1	1	--	--	1	100	1.50	--	--	--
Springfield		7	--	--	--	7	6	--	1	7	100	1.40	--	--	--
Waltham		3	1	--	--	2	2	--	--	2	100	2.18	--	--	--
Worcester		5	--	--	--	5	5	--	--	5	100	2.10	--	--	--

TABLE IV

ALL-DAY TRADE SCHOOLS (GIRLS)

Report of Graduate Placements by Schools

Class of 1963-64

Programs	Sex	Total Number of Graduates	Number not presently available for employment			Available for Employment	Number obtaining full-time jobs				Per cent	Median Hourly Wage	Number Employed Part-time	Number Unemployed	Number Status Unknown
			Entered Armed Service	Continued Training in Full-time School	All Other Reasons		In Occupation for Which Trained	In Field Related to Training	In Field Not Related to Training	Total Number Obtaining Full-time Jobs					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALL SCHOOLS	M	11	1	--	--	10	9	--	--	9	.90	1.35	--	1	--
	F	308	--	7	12	289	244	13	15	272	.94	1.32	6	5	6
BOSTON	F	52	--	--	--	52	48	3	1	52	100	1.35	--	--	--
Beauty Operator		28	--	--	--	28	26	1	1	28	100	1.25	--	--	--
Food Trades		5	--	--	--	5	4	1	--	5	100	1.35	--	--	--
Needle Trades		19	--	--	--	19	18	1	--	19	100	1.35	--	--	--
ESSEX COUNTY															
Beauty Operator	F	36	--	--	6	30	26	--	--	26	.87	1.25	--	1	3
FALL RIVER															
Needle Trades	F	22	--	3	1	18	17	--	--	17	.94	1.25	--	1	--
NORWOOD	M	7	1	--	--	6	5	--	--	5	.83	1.35	--	1	--
	F	58	--	--	--	58	41	2	9	52	.88	1.50	1	2	3
Beauty Operator	M	1	1	--	--	--	--	--	--	--	--	--	--	--	--
	F	45	--	--	--	45	35	--	4	39	.87	1.25	1	2	3
Food Trades	M	6	--	--	--	6	5	--	--	5	.83	1.35	--	1	--
	F	7	--	--	--	7	4	--	3	7	100	2.00	--	--	--
Needle Trades	F	6	--	--	--	6	2	2	2	6	100	1.50	--	--	--
SPRINGFIELD	F	65	--	2	5	58	48	8	2	58	100	1.30	--	--	--
Beauty Operator		41	--	1	3	37	31	4	2	37	100	1.50	--	--	--
Food Trades		17	--	1	1	15	11	4	--	15	100	1.30	--	--	--
Needle Trades		7	--	--	1	6	6	--	--	6	100	1.25	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
WORCESTER	M	4	--	--	--	4	4	--	--	4	100	1.85	--	--	--
	F	75	--	2	--	73	64	--	3	67	.92	1.32	5	1	--
Beauty Operator	F	43	--	2	--	41	38	--	--	38	.93	1.13	3	--	--
Food Trades	M	4	--	--	--	4	4	--	--	4	100	1.85	--	--	--
	F	9	--	--	--	9	8	--	--	8	.89	1.29	--	1	--
Needle Trades	F	20	--	--	--	20	16	--	2	18	.90	1.32	2	--	--
Printing	F	3	--	--	--	3	2	--	1	3	100	1.46	--	--	--

TABLE V

ALL-DAY TRADE SCHOOLS (GIRLS)

Report of Graduate Placements by Trades

Class of 1963-64

Programs	Sex	Total Number of Graduates	Number not presently available for employment			Available for Employment	Number obtaining full-time jobs				Per cent	Median Hourly Wage	Number Employed Part-time	Number Unemployed	Number Status Unknown
			Entered Armed Service	Continued Training in Full-time School	All Other Reasons		In Occupation for Which Trained	In Field Related to Training	In Field Not Related to Training	Total Number Obtaining Full-time Jobs					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALL TRADES	M	11	1	--	--	10	9	--	--	9	.90	1.35	--	1	--
	F	308	--	7	12	289	244	13	15	272	.94	1.32	6	5	6
BEAUTY OPERATOR	M	1	1	--	--	--	--	--	--	--	--	--	--	--	--
	F	193	--	3	9	181	156	5	7	168	.93	1.25	4	3	6
Boston		28	--	--	--	28	26	1	1	28	100	1.25	--	--	--
Essex County		36	--	--	6	30	26	--	--	26	.87	1.25	--	1	3
Norwood	M	1	1	--	--	--	--	--	--	--	--	--	--	--	--
	F	45	--	--	--	45	35	--	4	39	.87	1.25	1	2	3
Springfield		41	--	1	3	37	31	4	2	37	100	1.50	--	--	--
Worcester		43	--	2	--	41	38	--	--	38	.93	1.13	3	--	--
FOOD TRADES	M	10	--	--	--	10	9	--	--	9	.90	1.35	--	1	--
	F	38	--	1	1	36	27	5	3	35	.97	1.30	--	1	--
Boston		5	--	--	--	5	4	1	--	5	100	1.35	--	--	--
Norwood	M	6	--	--	--	6	5	--	--	5	.83	1.35	--	1	--
	F	7	--	--	--	7	4	--	3	7	100	2.00	--	--	--
Springfield		17	--	1	1	15	11	4	--	15	100	1.30	--	--	--
Worcester	M	4	--	--	--	4	4	--	--	4	100	1.85	--	--	--
	F	9	--	--	--	9	8	--	--	8	.89	1.29	--	1	--
NEEDLE TRADES	F	74	--	3	2	69	59	3	4	66	.96	1.32	2	1	--
Boston		19	--	--	--	19	18	1	--	19	100	1.35	--	--	--
Fall River		22	--	3	1	18	17	--	--	17	.94	1.25	--	1	--
Norwood		6	--	--	--	6	2	2	2	6	100	1.50	--	--	--
Springfield		7	--	--	1	6	6	--	--	6	100	1.25	--	--	--
Worcester		20	--	--	--	20	16	--	2	18	.90	1.32	2	--	--
PRINTING															
Worcester	F	3	--	--	--	3	2	--	1	3	100	1.46	--	--	--

TABLE VI

PART-TIME COOPERATIVE SCHOOLS

Report of Graduate Placements by Schools

Class of 1963-64

Programs	Sex	Total Number of Graduates	Number not presently available for employment			Available for Employment	Number obtaining full-time jobs				Per Cent	Median Hourly Wage	Number Employed Part-time	Number Unemployed	Number Status Unknown
			Entered Armed Service	Continued Training in Full-time School	All Other Reasons		In Occupation for Which Trained	In Field Related to Training	In Field Not Related to Training	Total Number Obtaining Full-time Jobs					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALL SCHOOLS	M	544	68	16	2	453	446	3	8	457	.99	1.50	--	1	--
ARLINGTON	M	3	1	--	--	2	2	--	--	2	100	1.50	--	--	--
Machinists		2	--	--	--	2	2	--	--	2	100	1.50	--	--	--
Mechanics (Automotive)		1	1	--	--	--	--	--	--	--	--	--	--	--	--
BEVERLY Machinists	M	12	--	--	--	12	12	--	--	12	100	2.39	--	--	--
BOSTON	M	274	55	10	2	207	199	--	7	206	.99	1.85	--	1	--
Brighton Mechanics (Automotive)	M	63	10	2	--	51	51	--	--	51	100	1.85	--	--	--
Charlestown Technicians (Electrical)	M	47	9	--	--	38	38	--	--	38	100	1.85	--	--	--
Dorchester	M	28	8	--	--	20	20	--	--	20	100	1.75	--	--	--
Cabinetmakers		25	6	--	--	19	19	--	--	19	100	1.75	--	--	--
Upholsterers		3	2	--	--	1	1	--	--	1	100	1.60	--	--	--
East Boston Machinists	M	34	3	3	1	27	24	--	3	27	100	1.60	--	--	--
Hyde Park Machinists	M	38	11	3	--	24	22	--	2	24	100	1.81	--	--	--
Roxbury Printers	M	38	4	1	1	32	31	--	1	32	100	1.62	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BOSTON (Continued)															
South Boston	M	26	10	1	--	15	13	--	1	14	.93	2.00	--	1	--
Mechanics (Auto Body, Fender)		5	3	--	--	2	2	--	--	2	100	2.30	--	--	--
Sheet Metal Workers		21	7	1	--	13	11	--	1	12	.92	2.00	--	1	--
FITCHBURG	M	10	1	2	--	7	5	1	1	7	100	1.75	--	--	--
Carpenters		3	--	1	--	2	1	1	--	2	100	1.75	--	--	--
Machinists		5	1	1	--	3	3	--	--	3	100	1.80	--	--	--
Mechanics (Automotive)		2	--	--	--	2	1	--	1	2	100	1.60	--	--	--
HAVERHILL	M	43	--	--	--	43	43	--	--	43	100	1.55	--	--	--
Carpenters		4	--	--	--	4	4	--	--	4	100	1.53	--	--	--
Machinists		8	--	--	--	8	8	--	--	8	100	1.50	--	--	--
Mechanics (Automotive)		4	--	--	--	4	4	--	--	4	100	1.75	--	--	--
Plumbers		4	--	--	--	4	4	--	--	4	100	1.45	--	--	--
Printers		3	--	--	--	3	3	--	--	3	100	1.67	--	--	--
Sheet Metal Workers		9	--	--	--	9	9	--	--	9	100	1.55	--	--	--
Technicians (Electrical)		6	--	--	--	6	6	--	--	6	100	1.62	--	--	--
Upholsterers		4	--	--	--	4	4	--	--	4	100	1.53	--	--	--
Welders		1	--	--	--	1	1	--	--	1	100	1.75	--	--	--
HOLYOKE	M	10	1	--	--	9	7	2	--	9	100	1.63	--	--	--
Machinists		1	1	--	--	--	--	--	--	--	--	--	--	--	--
Mechanics (Automotive)		2	--	--	--	2	1	1	--	2	100	1.60	--	--	--
Printers		4	--	--	--	4	4	--	--	4	100	1.63	--	--	--
Sheet Metal Workers		3	--	--	--	3	2	1	--	3	100	1.85	--	--	--
NEWTON	M	12	1	1	--	10	10	--	--	10	100	1.55	--	--	--
Machinists		1	1	--	--	--	--	--	--	--	--	--	--	--	--
Printers		3	--	--	--	3	3	--	--	3	100	1.58	--	--	--
Technicians (Electrical)		2	--	1	--	1	1	--	--	1	100	1.50	--	--	--
(Electronics)		6	--	--	--	6	6	--	--	6	100	1.55	--	--	--
PITTSFIELD	M	30	--	--	--	30	30	--	--	30	100	1.55	--	--	--
Carpenters		1	--	--	--	1	1	--	--	1	100	1.45	--	--	--
Draftsmen		1	--	--	--	1	1	--	--	1	100	1.45	--	--	--
Machinists		8	--	--	--	8	8	--	--	8	100	1.50	--	--	--
Mechanics (Auto, Body, Fender)		4	--	--	--	4	4	--	--	4	100	1.75	--	--	--
(Automotive)		6	--	--	--	6	6	--	--	6	100	1.75	--	--	--
Printers		4	--	--	--	4	4	--	--	4	100	1.55	--	--	--
Sheet Metal Workers		3	--	--	--	3	3	--	--	3	100	1.60	--	--	--
Welders		3	--	--	--	3	3	--	--	3	100	1.70	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SOUTHBRIDGE	M	17	5	2	--	10	10	--	--	10	100	1.43	--	--	--
Cabinetmakers		3	1	--	--	2	2	--	--	2	100	1.35	--	--	--
Draftsmen		4	1	--	--	3	3	--	--	3	100	1.43	--	--	--
Machinists		6	2	1	--	3	3	--	--	3	100	1.43	--	--	--
Sheet Metal Workers		1	--	--	--	1	1	--	--	1	100	1.40	--	--	--
Technicians (Electrical)		3	1	1	--	1	1	--	--	1	100	1.43	--	--	--
SPRINGFIELD	M	80	--	--	--	80	80	--	--	80	100	1.35	--	--	--
Cabinetmakers		8	--	--	--	8	8	--	--	8	100	1.35	--	--	--
Draftsmen		6	--	--	--	6	6	--	--	6	100	1.35	--	--	--
Machinists		16	--	--	--	16	16	--	--	16	100	1.35	--	--	--
Mechanics (Auto, Body, Fender)		5	--	--	--	5	5	--	--	5	100	1.35	--	--	--
(Automotive)		6	--	--	--	6	6	--	--	6	100	1.30	--	--	--
(Diesel)		4	--	--	--	4	4	--	--	4	100	1.30	--	--	--
Painters		2	--	--	--	2	2	--	--	2	100	1.35	--	--	--
Patternmakers		2	--	--	--	2	2	--	--	2	100	1.35	--	--	--
Printers		13	--	--	--	13	13	--	--	13	100	1.30	--	--	--
Sheet Metal Workers		3	--	--	--	3	3	--	--	3	100	1.30	--	--	--
Technicians (Electrical)		10	--	--	--	10	10	--	--	10	100	1.35	--	--	--
(Electronics)		3	--	--	--	3	3	--	--	3	100	1.35	--	--	--
Welders		2	--	--	--	2	2	--	--	2	100	1.40	--	--	--
WESTFIELD	M	53	4	1	--	48	48	--	--	48	100	1.40	--	--	--
Carpenters		3	--	--	--	3	3	--	--	3	100	1.50	--	--	--
Draftsmen		7	--	--	--	7	7	--	--	7	100	1.35	--	--	--
Machinists		24	1	--	--	23	23	--	--	23	100	1.50	--	--	--
Mechanics (Automotive)		14	2	--	--	12	12	--	--	12	100	1.40	--	--	--
Technicians (Electrical)		5	1	1	--	3	3	--	--	3	100	1.35	--	--	--

TABLE VII

PART-TIME COOPERATIVE SCHOOLS

Report of Graduate Placements by Trades
Class of 1963-64

Programs 1	Sex 2	Total Number of Graduates 3	Number not presently available for employment			Available for Employment 7	Number obtaining full-time jobs				Per cent 12	Median Hourly Wage 13	Number Employed Part-time 14	Number Unemployed 15	Number Status Unknown 16
			Entered Armed Service 4	Continued Training in Full-time School 5	All Other Reasons 6		In Occupation for Which Trained 8	In Field Related to Training 9	In Field Not Related to Training 10	Total Number Obtaining Full-time Jobs 11					
ALL TRADES	M	544	68	16	2	458	446	3	8	457	.99	1.50	--	1	--
CABINETMAKERS	M	36	7	--	--	29	29	--	--	29	100	1.35	--	--	--
Boston															
(Dorchester)		25	6	--	--	19	19	--	--	19	100	1.75	--	--	--
Southbridge		3	1	--	--	2	2	--	--	2	100	1.35	--	--	--
Springfield		8	--	--	--	8	8	--	--	8	100	1.35	--	--	--
CARPENTERS	M	11	--	1	--	10	9	1	--	10	100	1.53	--	--	--
Fitchburg		3	--	1	--	2	1	1	--	2	100	1.75	--	--	--
Haverhill		4	--	--	--	4	4	--	--	4	100	1.53	--	--	--
Pittsfield		1	--	--	--	1	1	--	--	1	100	1.45	--	--	--
Westfield		3	--	--	--	3	3	--	--	3	100	1.50	--	--	--
DRAFTSMEN	M	18	1	--	--	17	17	--	--	17	100	1.35	--	--	--
Pittsfield		1	--	--	--	1	1	--	--	1	100	1.45	--	--	--
Southbridge		4	1	--	--	3	3	--	--	3	100	1.43	--	--	--
Springfield		6	--	--	--	6	6	--	--	6	100	1.35	--	--	--
Westfield		7	--	--	--	7	7	--	--	7	100	1.35	--	--	--
MACHINISTS	M	155	20	8	1	126	121	--	5	126	100	1.50	--	--	--
Arlington		2	--	--	--	2	2	--	--	2	100	1.80	--	--	--
Beverly		12	--	--	--	12	12	--	--	12	100	2.39	--	--	--
Boston															
(East Boston)		34	3	3	1	27	24	--	3	27	100	1.60	--	--	--
(Hyde Park)		38	11	3	--	24	22	--	2	24	100	1.81	--	--	--
Fitchburg		5	1	1	--	3	3	--	--	3	100	1.80	--	--	--
Haverhill		8	--	--	--	8	8	--	--	8	100	1.50	--	--	--
Holyoke		1	1	--	--	--	--	--	--	--	--	--	--	--	--
Newton		1	1	--	--	--	--	--	--	--	--	--	--	--	--
Pittsfield		8	--	--	--	8	8	--	--	8	100	1.50	--	--	--
Southbridge		6	2	1	--	3	3	--	--	3	100	1.43	--	--	--
Springfield		16	--	--	--	16	16	--	--	16	100	1.35	--	--	--
Westfield		24	1	--	--	23	23	--	--	23	100	1.50	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MECHANICS (AUTO, BODY, FENDER)	M	14	3	--	--	11	11	--	--	11	100	1.75	--	--	--
Boston (South Boston)		5	3	--	--	2	2	--	--	2	100	2.30	--	--	--
Pittsfield		4	--	--	--	4	4	--	--	4	100	1.75	--	--	--
Springfield		5	--	--	--	5	5	--	--	5	100	1.35	--	--	--
MECHANICS (AUTOMOTIVE)	M	98	13	2	--	83	81	1	1	83	100	1.60	--	--	--
Arlington		1	1	--	--	--	--	--	--	--	--	--	--	--	--
Boston (Brighton)		63	10	2	--	51	51	--	--	51	100	1.85	--	--	--
Fitchburg		2	--	--	--	2	1	--	1	2	100	1.60	--	--	--
Haverhill		4	--	--	--	4	4	--	--	4	100	1.75	--	--	--
Holyoke		2	--	--	--	2	1	1	--	2	100	1.60	--	--	--
Pittsfield		6	--	--	--	6	6	--	--	6	100	1.75	--	--	--
Springfield		6	--	--	--	6	6	--	--	6	100	1.30	--	--	--
Westfield		14	2	--	--	12	12	--	--	12	100	1.40	--	--	--
MECHANICS (DIESEL)															
Springfield	M	4	--	--	--	4	4	--	--	4	100	1.30	--	--	--
PAINTERS															
Springfield	M	2	--	--	--	2	2	--	--	2	100	1.35	--	--	--
PATTERNMAKERS															
Springfield	M	2	--	--	--	2	2	--	--	2	100	1.35	--	--	--
PLUMBERS															
Haverhill	M	4	--	--	--	4	4	--	--	4	100	1.45	--	--	--
PRINTERS	M	65	4	1	1	59	58	--	1	59	100	1.62	--	--	--
Boston (Roxbury)		38	4	1	1	32	31	--	1	32	100	1.62	--	--	--
Haverhill		3	--	--	--	3	3	--	--	3	100	1.67	--	--	--
Holyoke		4	--	--	--	4	4	--	--	4	100	1.63	--	--	--
Newton		3	--	--	--	3	3	--	--	3	100	1.58	--	--	--
Pittsfield		4	--	--	--	4	4	--	--	4	100	1.55	--	--	--
Springfield		13	--	--	--	13	13	--	--	13	100	1.30	--	--	--
SHEET METAL WORKERS	M	40	7	1	--	32	29	1	1	31	.97	1.55	--	1	--
Boston (South Boston)		21	7	1	--	13	11	--	1	12	.92	2.00	--	1	--
Haverhill		9	--	--	--	9	9	--	--	9	100	1.55	--	--	--
Holyoke		3	--	--	--	3	2	1	--	3	100	1.85	--	--	--
Pittsfield		3	--	--	--	3	3	--	--	3	100	1.60	--	--	--
Southbridge		1	--	--	--	1	1	--	--	1	100	1.40	--	--	--
Springfield		3	--	--	--	3	3	--	--	3	100	1.30	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TECHNICIANS (ELECTRICAL)	M	73	11	3	--	59	59	--	--	59	100	1.43	--	--	--
Boston (Charlestown)		47	9	--	--	38	38	--	--	38	100	1.85	--	--	--
Haverhill		6	--	--	--	6	6	--	--	6	100	1.62	--	--	--
Newton		2	--	1	--	1	1	--	--	1	100	1.50	--	--	--
Southbridge		3	1	1	--	1	1	--	--	1	100	1.43	--	--	--
Springfield		10	--	--	--	10	10	--	--	10	100	1.35	--	--	--
Westfield		5	1	1	--	3	3	--	--	3	100	1.35	--	--	--
TECHNICIANS (ELECTRONICS)	M	9	--	--	--	9	9	--	--	9	100	1.55	--	--	--
Newton		6	--	--	--	6	6	--	--	6	100	1.55	--	--	--
Springfield		3	--	--	--	3	3	--	--	3	100	1.35	--	--	--
UPHOLSTERERS	M	7	2	--	--	5	5	--	--	5	100	1.53	--	--	--
Boston (Dorchester)		3	2	--	--	1	1	--	--	1	100	1.60	--	--	--
Haverhill		4	--	--	--	4	4	--	--	4	100	1.53	--	--	--
WELDERS	M	6	--	--	--	6	6	--	--	6	100	1.70	--	--	--
Haverhill		1	--	--	--	1	1	--	--	1	100	1.75	--	--	--
Pittsfield		3	--	--	--	3	3	--	--	3	100	1.70	--	--	--
Springfield		2	--	--	--	2	2	--	--	2	100	1.40	--	--	--

TABLE VIII

DAY PRACTICAL NURSING SCHOOLS

Report of Graduate Placements by Schools
Class of 1963-64

Programs	Sex	Total Number of Graduates	Number not presently available for employment: Entered Armed Service	Continued Training in Full-time School	All Other Reasons	Available for Employment	Number obtaining full-time jobs: In Occupation for Which Trained	In Field Related to Training	In Field Not Related to Training	Total Number Obtaining Full-time Jobs	Per cent	Median Hourly Wage	Number Employed Part-time	Number Unemployed	Number Status Unknown
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALL SCHOOLS	M	4	--	--	--	4	4	--	--	4	100	1.68	--	--	--
	F	427	1	7	13	406	367	4	6	377	.93	1.50	15	9	5
BOSTON Practical Nursing	F	35	--	--	--	35	30	--	--	30	.80	1.50	2	--	3
ESSEX COUNTY Practical Nursing	F	30	--	--	3	27	23	--	--	23	.85	1.58	3	--	1
FALL RIVER Practical Nursing	M	2	--	--	--	2	2	--	--	2	100	--	--	--	--
	F	32	--	--	--	32	30	--	--	30	.94	1.55	--	2	--
LAWRENCE Practical Nursing	F	30	--	2	3	25	24	--	1	25	100	1.50	--	--	--
LOWELL Practical Nursing	F	13	--	--	--	13	11	--	--	11	.85	1.60	2	--	--
NORTH ADAMS - CHARLES H. MC CANN	F	18	--	--	--	18	14	--	4	18	100	1.38	--	--	--
Dental Assistants		5	--	--	--	5	2	--	3	5	100	1.38	--	--	--
Medical Assistants		5	--	--	--	5	4	--	1	5	100	1.38	--	--	--
Practical Nursing		6	--	--	--	6	6	--	--	6	100	1.60	--	--	--
Surgical Assistants		2	--	--	--	2	2	--	--	2	100	1.38	--	--	--
NORTHAMPTON Practical Nursing	F	8	--	--	--	8	8	--	--	8	100	1.36	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NORWOOD															
Practical Nursing	F	18	--	1	--	17	14	--	--	14	.82	1.67	1	1	1
PITTSFIELD															
Practical Nursing	F	16	--	--	--	16	15	--	--	15	.94	1.50	--	1	--
SPRINGFIELD	F	113	1	3	5	104	98	4	1	103	.99	1.50	--	1	--
Dental Assistant		23	--	--	1	22	20	2	--	22	100	1.50	--	--	--
Medical Assistant		27	--	2	--	25	22	2	1	25	100	1.50	--	--	--
Practical Nursing		40	--	--	2	38	37	--	--	37	.97	1.61	--	1	--
Surgical Technician		23	1	1	2	19	19	--	--	19	100	1.55	--	--	--
TAUNTON															
Practical Nursing	M	2	--	--	--	2	2	--	--	2	100	1.68	--	--	--
	F	25	--	--	--	25	24	--	--	24	.96	1.62	--	1	--
WORCESTER	F	89	--	1	2	86	76	--	--	76	.88	1.43	7	3	--
Dental Assistant		17	--	--	1	16	16	--	--	16	100	1.43	--	--	--
Practical Nursing		44	--	--	--	44	34	--	--	34	.77	1.65	7	3	--
Surgical Technician		28	--	1	1	26	26	--	--	26	100	1.34	--	--	--

TABLE IX

DAY PRACTICAL NURSING SCHOOLS

Report of Graduate Placements by Trades

Class of 1963-64

Programs 1	Sex 2	Total Number of Graduates 3	Number not presently available for employment			Available for Employment 7	Number obtaining full-time jobs				Per cent 12	Median Hourly Wage 13	Number Employed Part-time 14	Number Unemployed 15	Number Status Unknown 16
			Entered Armed Service 4	Continued Training in Full-time School 5	All Other Reasons 6		In Occupation For Which Trained 8	In Field Related to Training 9	In Field Not Related to Training 10	Total Number Obtaining Full-time Jobs 11					
ALL TRADES	M	4	--	--	--	4	4	--	--	4	100	1.68	--	--	--
	F	427	1	7	13	406	367	4	6	377	.93	1.50	15	9	5
DENTAL ASSISTANT	F	45	--	--	2	43	38	2	3	43	100	1.43	--	--	--
North Adams - Charles H. McCann		5	--	--	--	5	2	--	3	5	100	1.38	--	--	--
Springfield		23	--	--	1	22	20	2	--	22	100	1.50	--	--	--
Worcester		17	--	--	1	16	16	--	--	16	100	1.43	--	--	--
MEDICAL ASSISTANT	F	32	--	2	--	30	26	2	2	30	100	1.50	--	--	--
North Adams - Charles H. McCann		5	--	--	--	5	4	--	1	5	100	1.38	--	--	--
Springfield		27	--	2	--	25	22	2	1	25	100	1.50	--	--	--
PRACTICAL NURSING	M	4	--	--	--	4	4	--	--	4	100	1.68	--	--	--
	F	297	--	3	8	286	256	--	1	257	.89	1.60	15	9	5
Boston		35	--	--	--	35	30	--	--	30	.80	1.50	2	--	3
Essex County		30	--	--	3	27	23	--	--	23	.85	1.58	3	--	1
Fall River	M	2	--	--	--	2	2	--	--	2	100	--	--	--	--
	F	32	--	--	--	32	30	--	--	30	.93	1.55	--	2	--
Lawrence		30	--	2	3	25	24	--	1	25	100	1.50	--	--	--
Lowell		13	--	--	--	13	11	--	--	11	.85	1.60	2	--	--
North Adams - Charles H. McCann		6	--	--	--	6	6	--	--	6	100	1.60	--	--	--
Northampton		8	--	--	--	8	8	--	--	8	100	1.36	--	--	--
Norwood		18	--	1	--	17	14	--	--	14	.82	1.67	1	1	1
Pittsfield		16	--	--	--	16	15	--	--	15	.94	1.50	--	1	--
Springfield		40	--	--	2	38	37	--	--	37	.97	1.61	--	1	--
Taunton	M	2	--	--	--	2	2	--	--	2	100	1.68	--	--	--
	F	25	--	--	--	25	24	--	--	24	.96	1.62	--	1	--
Worcester		44	--	--	--	44	34	--	--	34	.77	1.65	7	3	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SURGICAL TECHNICIAN	F	53	1	2	3	47	47	--	--	47	100	1.38	--	--	--
North Adams - Charles H. McCann		2	--	--	--	2	2	--	--	2	100	1.38	--	--	--
Springfield		23	1	1	2	19	19	--	--	19	100	1.55	--	--	--
Worcester		28	--	1	1	26	26	--	--	26	100	1.34	--	--	--

TABLE X

DAY AREA VOCATIONAL SCHOOLS

Report of Graduate Placements by Schools
Class of 1963-64

Programs	Sex	Total Number of Graduates	Number not presently available for employment			Available for Employment	Number obtaining full-time jobs				Per cent	Median Hourly Wage	Number Employed Part-time	Number Unemployed	Number Status Unknown
			Entered Armed Service	Continued Training in Full-time School	All Other Reasons		In Occupation for Which Trained	In Field Related to Training	In Field Not Related to Training	Total Number Obtaining Full-time Jobs					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALL SCHOOLS	M	199	31	25	1	142	122	3	9	134	.94	1.75	1	3	4
ARLINGTON Technicians (Electronics)	M	11	3	2	--	6	5	1	--	6	100	1.75	--	--	--
FALL RIVER Draftsmen	M	3	--	1	--	2	2	--	--	2	100	1.55	--	--	--
LEOMINSTER Draftsmen	M	3	--	--	--	3	3	--	--	3	100	2.00	--	--	--
LYNN Technicians (Electronics)	M	15	--	3	--	12	6	1	4	11	.92	1.75	--	1	--
MARLBORO	M	20	3	6	--	11	4	--	2	6	.55	2.00	--	1	4
Draftsmen		10	2	--	--	8	4	--	--	4	.50	2.00	--	--	4
Technicians (Electronics)		10	1	6	--	3	--	--	2	2	.67	1.60	--	1	--
MEDFORD	M	18	1	1	--	16	15	1	--	16	100	1.37	--	--	--
Technicians (Electrical)		12	--	--	--	12	11	1	--	12	100	1.37	--	--	--
(Electronics)		6	1	1	--	4	4	--	--	4	100	1.50	--	--	--
NEW BEDFORD Technicians (Electronics)	M	12	1	1	1	9	6	--	1	7	.78	1.56	1	1	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NEWTON	M	3	--	3	--	--	--	--	--	--	--	--	--	--	--
Draftsmen		1	--	1	--	--	--	--	--	--	--	--	--	--	--
Technicians (Electronics)		2	--	2	--	--	--	--	--	--	--	--	--	--	--
PITTSFIELD															
Draftsmen	M	4	--	--	--	4	4	--	--	4	100	1.50	--	--	--
SOUTH SHORE															
Technicians (Electronics)	M	9	2	1	--	6	6	--	--	6	100	1.95	--	--	--
SPRINGFIELD	M	53	13	5	--	35	35	--	--	35	100	1.75	--	--	--
Data Processing		15	1	3	--	11	11	--	--	11	100	2.00	--	--	--
Draftsmen (Mechanical)		12	--	--	--	12	12	--	--	12	100	1.75	--	--	--
Machinists		4	--	--	--	4	4	--	--	4	100	1.40	--	--	--
Technicians (Electronics, Industrial)		8	5	1	--	2	2	--	--	2	100	1.50	--	--	--
(Oil, Heat, Power)		13	7	1	--	5	5	--	--	5	100	2.25	--	--	--
Welders		1	--	--	--	1	1	--	--	1	100	1.35	--	--	--
WORCESTER	M	48	8	2	--	38	36	--	2	38	100	1.95	--	--	--
Draftsmen		20	4	2	--	14	14	--	--	14	100	2.10	--	--	--
Technicians (Electronics)		24	2	--	--	22	21	--	1	22	100	1.95	--	--	--
(Metals)		4	2	--	--	2	1	--	1	2	100	1.85	--	--	--

TABLE XI

DAY AREA VOCATIONAL SCHOOLS

Report of Graduate Placements by Trades
Class of 1963-64

Programs	Sex	Total Number of Graduates	Number not presently available for employment			Available for Employment	Number obtaining full-time jobs				Per cent	Median Hourly Wage	Number Employed Part-time	Number Unemployed	Number Status Unknown
			Entered Armed Service	Continued Training in Full-time School	All Other Reasons		In Occupation for Which Trained	In Field Related to Training	In Field Not Related to Training	Total Number Obtaining Full-time Jobs					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALL TRADES	M	199	31	25	1	142	122	3	9	134	.94	1.75	1	3	4
DATA PROCESSING															
Springfield	M	15	1	3	--	11	11	--	--	11	100	2.00	--	--	--
DRAFTSMEN	M	41	6	4	--	31	27	--	--	27	.90	2.00	--	--	4
Fall River		3	--	1	--	2	2	--	--	2	100	1.55	--	--	--
Leominster		3	--	--	--	3	3	--	--	3	100	2.00	--	--	--
Marlboro		10	2	--	--	8	4	--	--	4	.50	2.00	--	--	4
Newton		1	--	1	--	--	--	--	--	--	--	--	--	--	--
Pittsfield		4	--	--	--	4	4	--	--	4	100	1.50	--	--	--
Worcester		20	4	2	--	14	14	--	--	14	100	2.10	--	--	--
DRAFTSMEN (MECHANICAL)															
Springfield	M	12	--	--	--	12	12	--	--	12	100	1.75	--	--	--
MACHINISTS															
Springfield	M	4	--	--	--	4	4	--	--	4	100	1.40	--	--	--
TECHNICIANS (ELECTRICAL)															
Medford	M	12	--	--	--	12	11	1	--	12	100	1.37	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TECHNICIANS															
(ELECTRONICS)	M	97	15	17	1	64	50	2	8	60	.94	1.75	1	3	--
Arlington		11	3	2	--	6	5	1	--	6	100	1.75	--	--	--
Lynn		15	--	3	--	12	6	1	4	11	.92	1.75	--	1	--
Marlboro		10	1	6	--	3	--	--	2	2	.67	1.60	--	1	--
Medford		6	1	1	--	4	4	--	--	4	100	1.50	--	--	--
New Bedford		12	1	1	1	9	6	--	1	7	.78	1.56	1	1	--
Newton		2	--	2	--	--	--	--	--	--	--	--	--	--	--
South Shore		9	2	1	--	6	6	--	--	6	100	1.95	--	--	--
Springfield		8	5	1	--	2	2	--	--	2	100	1.50	--	--	--
Worcester		24	2	--	--	22	21	--	1	22	100	1.95	--	--	--
TECHNICIANS															
(METAL)															
Worcester	M	4	2	--	--	2	1	--	1	2	100	1.85	--	--	--
TECHNICIANS															
(OIL, HEAT, POWER)															
Springfield	M	13	7	1	--	5	5	--	--	5	100	2.25	--	--	--
WELDERS															
Springfield	M	1	--	--	--	1	1	--	--	1	100	1.35	--	--	--

VT 001 033

Pattern for Progress, An Extension of the Blueprint for Action, An Area Study Toward Improved Vocational-Technical Education for the Youth of Barry, Branch, Calhoun and Eaton Counties.

Committee of 100, Marshall, Mich. Implementation Comm.
Pub Date - 17Feb66
MF AVAILABLE IN VT-ERIC SET. 57p.

ACADEMIC ACHIEVEMENT, *EDUCATIONAL PLANNING, HIGH SCHOOLS, *VOCATIONAL EDUCATION, QUESTIONNAIRES, OCCUPATIONAL SURVEYS, HIGH SCHOOL GRADUATES, *SURVEYS, DROPOUTS, STUDENT ATTITUDES, STUDENT ENROLLMENT, GRADUATE SURVEYS, ADMINISTRATOR ATTITUDES, *AREA VOCATIONAL SCHOOLS, EMPLOYMENT OPPORTUNITIES, EMPLOYMENT STATISTICS, EMPLOYMENT PROJECTIONS, POPULATION TRENDS, ECONOMIC FACTORS,
Michigan,

To carry out the committee's 1964 recommendations to establish two area centers, a study was conducted to provide data on area population, student interests, projected manpower needs, and available economic and educational resources. A survey of 949 graduates and dropouts indicated that--(1) 29 percent had married, (2) 13 percent were parents, (3) 23 percent of the employed youth had pursued a college preparatory curriculum, (4) 30 percent had held two or more full-time jobs since leaving school in 1964, (5) 15 percent were currently unemployed or on lay-off, and (6) 10 percent were engaged in some form of additional schooling. Information from those presently employed indicated that 40 percent felt no opportunity for advancement and 33 percent were dissatisfied with their work. A skilled manpower survey, conducted in 1964, showed a demand for workers in the clerical, service, and craftsman areas comprising 45 of 53 jobs employers called "hard to fill". Of the 19 school administrators surveyed (1) 84 percent felt that their offerings in vocational education were inadequate, (2) 79 percent felt that their budget for vocational education was inadequate, (3) 74 percent considered their equipment for vocational education to be inadequate, (4) 68 percent considered their facilities for vocational education to be inadequate. The 10 recommendations adopted by the committee in 1966 included (1) High schools should not relinquish their responsibility and control of occupational education for secondary students, (2) All curriculums offered in the area centers should be established only after an in-depth study, and (3) Secondary students enrolled in area centers should continue in their home high schools for purposes of general studies, athletics, activities, and graduation. Questionnaire forms and statistical data are included. (EM)

VT 001 033

ED022065

PATTERN FOR PROGRESS

AN EXTENSION OF THE

Blueprint For Action

AN AREA STUDY

VT001033

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

PATTERN FOR PROGRESS

AN EXTENSION
OF THE
BLUEPRINT FOR ACTION

AN AREA STUDY

TOWARD IMPROVED
VOCATIONAL-TECHNICAL
EDUCATION FOR
THE YOUTH OF
BARRY,
BRANCH,
CALHOUN
AND EATON
COUNTIES

A STUDY CONDUCTED FOR-

THE IMPLEMENTATION COMMITTEE
COMMITTEE OF 100
CALHOUN COUNTY BUILDING
MARSHALL, MICHIGAN

Tables

1. Age of Participants--Student Interest Inventory 19
2. Personal Data of Participants 19
3. Curriculum Followed During High School 19
4. Highest Grade Completed 19
5. Reasons For Leaving High School 19
6. Full-Time Jobs Held In Last Year 19
7. Present Occupation Of Participants 20
8. Relationship And Effectiveness Of School Training To Job 20
9. Liking For Present Job 20
10. Employment Status And Major Occupation Group Of The Nation's June, 1961, High School Graduates Not Enrolled In College And Nongraduates Who Dropped Out Of School In 1961 21
11. Requests For Training By Regional Youth 22
12. Labor Force And Employment, By Sex, For Counties 24
13. Employment By Major Occupation Group, By Sex, For Counties 25
14. Employment By Major Industry Group, By County . 26
15. Participation In Skilled Manpower Survey 26
16. Expansion And Replacement Needs By Magnitude 27
17. Regional Employment And Projections For Next Five Years 28
18. Occupations Considered "Hard To Fill" 32
19. Interest In Additional Occupational Training. . . . 34
20. Years Of School Completed By Persons 25 Years Old And Over, By County 38
21. Enrollment By Intermediate District 38
22. Enrollment In Vocational Classes In Michigan: Selected Years 39
23. Course Offerings, Enrollments, And Facilities In The Region's Trade & Industry Curriculums 40
24. Course Offerings, Enrollments, And Facilities In The Region's Business Education Curriculums . . 40
25. Course Offerings, Enrollments, And Facilities In The Region's Home Economics And Agriculture Curriculums 41
26. Number Of Region's Vocational And Practical Arts Teachers Holding Vocational Certification. . 41
27. Percentage Of Region's Teachers With Two Or More Years Work Experience In Their Teaching Field 42
28. Relationship Of Teaching Duties To College Studies 42
29. Teaching Experience Of Region's Vocational And Practical Arts Teachers 42
30. Selected Economic Characteristics Of The Region 45
31. Retail Sales 46
32. Property Tax Potential 46
33. Population Of Region And Percentage Change. . . 48
34. Population, Ages 15 – 54 48
35. Population Density And Number Of Households . . 49
36. Municipalities Having 5,000 Inhabitants Or More 49

Figures

1. Paths For Students Entering Employment 17
2. Percent Change In Employment -- 1960-1970 24
3. Completion Ratios In Michigan Schools: Selected Years 38
4. Locations Of Participating Schools 39
5. Average Property Tax Rates, All Purposes 46
6. Regional Population And County Composition . . . 48

Appendix Figures

A-1. Employer File Card 50
A-2. Invitation To Participate 50
A-3. Editorial Reprints 51
A-4. Instructions For Questionnaire 51
A-5. Questionnaire--Sample Page 52
A-6. Student Interest Inventory 53-54

B-1. Formulas Used In Projections 55-56

Contents

Pattern for Progress

Preface 5

Summary 6

Recommendations 10

1. Introduction 11
2. Definitions, Concepts, Background Information 14
3. Youth Express Their Views 18
4. Employers Detail Their Needs 23
5. School Administrators Voice Concern 37
6. Reviewing The Schools 38
7. Economic Aspects 45
8. Population Facts And Figures 47

Appendix A. Sample Forms Used In Survey 50

Appendix B. Formulas Used In Projections 55

THE IMPLEMENTATION COMMITTEE, 1964-66

V. M. Stilson, *Chairman*
John Anderson
Wendell H. Anderson
Raymond G. Barker
Dr. Carl W. Brautigam
James Cook
John M. Converse
Rev. Lorimer Crippen
Jack C. Curtis
Harry R. Davidson
John P. Dygert
Forest A. French
Carl C. Gawart
Bruce A. Gray
Ernest Gray
Mrs. Robert Green
Richard Guenther
Arden Harper
Robert Harvey
Walter Hendrickson
Carlo W. Heikkinen
Gareth Heisler
Lowell E. Hoag
Basil Johnson
Elwood Larsen
Elton Lawrence
Robert J. Luter
Jack K. Mawdsley
Ralph H. Miller
John Munn
Russell A. Newell
Raymond Peake
Richard L. Preston
Forest A. Rinehart
Bruce Sellers
Hugh Sisung
David Steger
Harold S. Stockwell
Lloyd C. TeSelle
Mrs. Ella M. Thomas
Gordon L. Thompson
Mrs. Elizabeth Underwood
Earl Van Sickle
Mrs. Waive Westfield
Miss Audrey K. Wilder
Marvin Winegar
Dr. Richard Whitmore
Carroll Wolff

THE STEERING COMMITTEE, 1965

Harold S. Stockwell
Superintendent
Barry Intermediate School District

C. Alfred Rice
Superintendent
Branch Intermediate School District

Stephen M. Glaza
Superintendent
Calhoun Intermediate School District

Wendell H. Anderson
Superintendent
Eaton Intermediate School District

Dr. Richard F. Whitmore
Director
Kellogg Community College

THE CONSULTANTS ASSISTING WITH RECOMMENDATIONS

Dr. Peter G. Haines
Michigan State University

Robert K. Shafer
Bucks County, Pennsylvania

Ralph C. Wenrich
University of Michigan

THE SURVEY STAFF

James E. Cook, *Survey Director*
Dean
Applied Arts & Sciences
Kellogg Community College

Eugene R. Verrette, *Assistant Survey Director*
Chairman
Adult Education
Kellogg Community College

Robert J. Luter, *Consultant*
Consultant
Vocational-Technical Education
Calhoun Intermediate School District

Bert J. Fetters, *Statistician*
Instructor
Technical Mathematics
Kellogg Community College

Doris Phares, *Secretary*

Donna Clark, *Secretary*

Preface

Early in 1962, area school administrators began to voice concern about the need for more and better vocational - technical training for employment bound youth, school "drop-outs," and adults who must learn new skills to compete in a world where unskilled labor is almost unsalable.

By late summer of 1963 the boards of education of the intermediate school districts of Barry, Branch, Calhoun, and Eaton Counties approved a plan for financing a series of meetings. From the four counties, a *Committee of 100* --representing a broad range of community leaders, trades, and professions--was chosen to study the various aspects of the need for more and better vocational - technical training.

Eight months of study preceded the June 27, 1964, adoption of a series of recommendations. A digest of these recommendations was prepared and published under the title *Blueprint For Action.* An Area Implementation Committee was approved to help put the recommendations into practice.

During the autumn months of 1964, the Implementation Committee began its assignment. They quickly agreed there was need for additional detailed information upon which to base their planning. An application was filed with the Michigan Division of Vocational Education for the funding of this area study under the provisions of the Vocational Education Act of 1963.

This area study began in April, 1965, with a project title of *Skilled Manpower Survey.* A Steering Committee assisted with planning in the formative stages. Field work began in May and was conducted through the summer months. A preliminary draft was released on November 19, 1965. Consultants reviewed this preliminary report. After seeking the advice of both the consultants and the area superintendents, recommendations were adopted by the Implementation Committee on February 17, 1966.

This publication represents the final report upon this area study. It contains the findings of the survey and the resultant recommendations.

Summary

Introduction

Community leaders and school personnel across the nation are recognizing the need for more and better training for employment-bound youth, school drop-outs, and adults who must learn new skills to compete in a world where unskilled labor is almost unsalable. Employment-bound youth must have education on a par with that offered college-bound youth.

Calhoun County school superintendents began discussing the problem as early as 1962. By the autumn of 1963, a Committee of 100--representing a broad range of community leaders, trades, and professions from the four county area--began to study the problem. A series of recommendations were discussed and adopted on June 27, 1964.

Implicit in all the discussions and recommendations is an awareness of the need to:

1) bring together students with special training needs. This will make it possible to justifiably support the competent faculty and the specialized facilities necessary to adequately ready youth and adults for today's skilled job market.
2) develop a cooperative working relationship between secondary schools, intermediate districts, and the community college.
3) provide an adequate, broadened base of financial support.

This subsequent study of the region is undertaken to produce more detailed information upon which to base further planning.

Definitions, Concepts, Background Information

Occupational education refers to any and all education and training offered as preparation for employment at the professional, semiprofessional, technical, skilled and semiskilled levels in all fields of employment. Vocational education in its broadest sense is education and training for employment. Commonly it has been associated with high school, vocational, or trade school preparation for skilled and semiskilled occupations.

Necessity for several levels of preparation has resulted in much confusion over quality of training programs. The level of a training program is determined by its objectives. The quality is measured by how well the program achieves its objectives. Thus, it is quite possible for a program designed to prepare waitresses to be of equal or higher quality than one preparing accountants. The difference in level, however, is obvious.

Most Michigan high schools are unable to offer truly comprehensive programs for two reasons: (1) They lack sufficient numbers of students, and (2) they lack sufficient financial resources. The area concept combines resources of several districts to insure adequate enrollments, provide a wider range of course offerings, avoids duplication of equipment and instructional costs in neighboring communities, and provides a broader tax base.

There are four common ways to organize area vocational education programs. (1) Two or more local school districts cooperatively operating such programs, (2) the operation of such programs on a county-wide basis, (3) the operation of such programs by community colleges on an area basis, and (4) state operated centers for such programs.

Youth Express Their Views

Nine hundred forty-nine graduates and dropouts from the twenty participating districts contributed views on their first year out of high school. Replies were separated into those who became college students (495) and those who entered employment (454).

Among the employed youth, 29% had married--13% were parents. Twenty-three per cent of the employed youth had pursued a college preparatory curriculum rather than a general or vocational curriculum. During the first year, 30% had held two or more full-time jobs--15% were currently unemployed or on layoff. Significantly, ten per cent were now engaged in some form of additional schooling. In reference to their current job, 40% felt no opportunity for advancement--39% were dissatisfied with their salary--33% were dissatisfied with the work.

Nationally, 63% of female graduates and 11% of all dropouts find entry employment in clerical occupations. Thirty-one per cent of all male graduates and 23% of the male dropouts find entry employment as operatives. Eighteen per cent of all nongraduates find employment as service workers. It is not surprising, then, to find that clerical and service occupations dominate the requests for additional training by our region's youth.

Employers Detail Their Needs

The national labor force will increase nearly 20% during the 1960's. Workers under age 25 will account for 46% of this growth. One out of three workers will be a woman. The labor force is highly mobile--7% of all male workers are now living in a county different from the one in which they lived a year before.

The number of employees in service industries now out-number those in production industries. By 1970, production type employment will increase 17% but service type employment will rise 30%.

Approximately 45% of the male employment in the region is in two major occupation groups: a) craftsmen, foremen, and kindred workers, and b) operatives and kindred workers. Over one-third of the employed women are in one group--clerical, sales, and kindred workers. These three occupation groups account for over 50% of the total regional employment. Each of these three groups have shown a steady growth since 1940.

Details about 182 individual occupations are provided by the Skilled Manpower Survey conducted in the region during the summer of 1965. Sixty-two per cent of the employers responded with 38% becoming active participants. The 1,611 participants (including all major employers) represented 32,199 employees--41% of the employment in the three counties plus the portion of Eaton.

Fifty-three occupations were found to have significant expansion and replacement needs. Each of these "demand" occupations was noted if it is also considered by employers to be "hard to fill". Another notation was made if employers are interested in additional training for their present employees. Further information is provided in a series of tables.

Of the fifty-three "demand" occupations, forty-five (85%) are from three major occupation groups. Twenty-one occupations (40%) belong to clerical, sales and kindred workers. Thirteen occupations (24%) may be grouped as service workers. Eleven (21%) are from the craftsmen, foremen, and kindred workers grouping.

School Administrators Voice Concern

Seventy per cent of high school graduates *do not* continue into a four year college program. How adequate, then, are school offerings for that majority who are employment-bound rather than college bound? Nineteen school administrators replied.

- 84% felt their subject offerings in vocational education were inadequate.
- 79% felt their budget for vocational education was inadequate.
- 74% considered their equipment for vocational education to be inadequate.
- 68% considered their facilities for vocational education to be inadequate.

Sixteen of the nineteen administrators felt that some vocational education should be provided in the high school with more available in an area center or in a community college.

Reviewing The Schools

In Michigan in 1963 only seven youths out of ten were completing twelve years of schooling. In this four county region, one-third of the persons 25 years of age and over have completed eight grades or less. Only one-sixth have continued their education beyond high school. Regional enrollment in grades 9 – 12 in a recent school year totaled 16,630 youths. The majority of this group are not college-bound and could benefit from improved pre-employment training.

During 1962, only 142,475 students were being serviced in approved vocational classes in all of Michigan. Less than twelve per cent of these were enrolled in the high-demand distributive occupations.

Eighteen of the regional high schools indicated they offer a guidance program. However, thirteen of these offer no job placement service and ten do not practice a periodic follow-up of graduates. Among the eighteen schools, only six offer courses in Adult Education.

Seventeen high schools offer one or more courses in the areas of trade and industry, business education, and home economics. Many of these are not approved vocational classes. Some have avocational rather than vocational objectives. Others are serviced by teachers who do not hold vocational certification. Ten schools have one or more courses in vocational agriculture. These vocational and practical arts classes have a combined enrollment of over 12,000. However, many students are enrolled in two or more classes simultaneously.

Emphasis in the trade and industry area is now placed upon courses in general shop, wood shop, machine shop, and drafting. More emphasis could be placed upon metals shop instruction, particularly in welding and foundry techniques. A great shortage of auto mechanics and service station attendants is indicated by employers, yet few schools are offering course work in this area. Further study should be given to coordinating several subjects to provide pre-employment preparation for such demand occupations as millwrights. Possibilities of pre-apprenticeship courses for carpenters, electricians, masons, and plumbers should be studied.

Emphasis in business education is now heavily concentrated in typing and bookkeeping. Both clerk-typists and bookkeepers are demand occupations. Additional emphasis should be given to preparation of office machine operators, stenographers, and capable all-around secretaries. There is great need for well-trained retail salespersons. Existing courses and enrollments in distributive education scarcely begin to meet this demand.

The sole emphasis to date in home economics has been in homemaking. Course offerings should be expanded into such wage-earning demand occupations as waitresses, cooks or chefs, and laundry and dry-cleaning workers.

Eight schools deemed their drafting facilities to be poor. Six schools reported poor facilities for distributive education. This is more than the number deemed adequate and superior. There are twice as many poor facilities as adequate and superior ones in use for office practice. Poor facilities equal the number of adequate and superior ones devoted to business machines. All four areas prepare workers for occupations that are in heavy employment demand. The inadequacy of physical facilities and equipment is related directly to inadequate budgets.

In the regional schools only 29% of the 129 teachers of vocational and practical arts subjects hold vocational certification. This certification is given to applicants who possess the combination of education and appropriate work experience specified in the State Plan for Vocational Education. Possibilities exist for raising this percentage. Many teachers feel they have the necessary qualifications.

Most teachers are teaching in the field in which they majored while in college. Only a few are teaching additional courses outside their major specialty. Nearly 1/3 of the 129 teachers of vocational and practical arts subjects have over ten years of teaching experience.

Kellogg Community College provides service to youth and adults living within a forty mile radius in five counties. The college is one of the more comprehensive in the middle west. The 1965-66 catalog lists twenty curriculums in which students take freshmen and sophomore courses for transfer to a 4-year college or university. The catalog also lists twenty curriculums in the terminal division. Each of these have an occupational objective leading directly into highly skilled or semi-professional employment. All instructors in reimbursable subjects hold vocational certification. Many have completed work beyond the Master's degree. Over $1 million is invested in laboratories for the terminal curriculums. Forty-three per centof day students are currently enrolled in terminal programs. A Department of Adult Education offers a variety of non-credit evening courses and plans to expand into training for many skilled and semi-skilled occupations.

Economic Aspects

Any plan to bring together students with special training needs will require adequate financing. Sufficient support must be provided to obtain competent faculty, specialized equipment, and adequate housing.

Family income is below the state median in three of the four counties. A large percentage of families have incomes of less than $3,000.00 per year. Retail sales, while increasing steadily, have done so at a pace somewhat slower than the state average. Adequate vocational education programs, as sought for this region, are expensive to establish and operate. A cooperative approach as suggested by the "Committee of 100" would lessen the financial burden on individual families.

Property tax rates in this region are 4.46 to 8.65 mills lower than the state average. A modest rise in these rates would not destroy this comparative advantage. One-half mill of tax spread on the state equalized valuation of the intermediate districts of Barry, Branch, Calhoun and a portion of Eaton would provide $305,845 per year for the support of an area vocational center. This would cost approximately $5.00 per year for the owner of a home with a sale value of $20,000.

Population Facts and Figures

Implicit in the recommendations of the Committee of 100 was the bringing together of students with special training. needs. The purpose was to develop a population large enough to make the specialty course offerings economical and efficient.

Much of the group between 15 and 24 years of age are candidates for some form of pre-employment training. There were 35,223 persons in this category at the time of the 1960 census. About 3,500 will graduate from high school in a given year. Twenty per cent will go on to complete a 4-year college degree. Another 30% will likely go into community college, business college, trade school, or apprenticeship programs. This still leaves about 1,750 in the four counties who must enter the labor market each year with only a high school preparation. Perhaps half of these should have occupational preparation not now available in their home high schools.

Calhoun County has nearly two-thirds of the total population in the region covered by this study. Two of the counties have one-half or less of the state average population density expressed in persons per square mile. Calhoun County exceeds the average density. In the territory covered by this study, there are only five municipalities which exceed 5,000 inhabitants. Three of the five are in Calhoun County.

Recommendations

Adopted By Implementation Committee, February 17, 1966

1. High Schools should not relinquish their responsibility and control of occupational education for secondary students.
   Occupational Education has become part of the body of secondary education and should not be viewed and treated as the step child of the secondary or senior high schools.
2. The resources and population of most of the existing high schools in the three (3) Intermediate Districts indicate that there is a need for a cooperative organizational plan to offer secondary students a comprehensive program of occupational education.
3. The Committee recommends:
   a. The consolidation of Barry, Branch, and Calhoun Intermediate Districts and the annexation of Bellevue, Maple Valley, and Olivet to the enlarged whole.
   b. The development of two (2) area centers (schools), one located in the Northwestern and another in the Southeastern part of Calhoun County. Calhoun County is the geographic and population center of the three (3) district area, thus providing obvious advantages.
   c. That the area centers should be flexible in curriculum and program of instruction in order to adequately meet the vocational-technical needs of business and industry as they change from time to time.
   d. That the area centers should provide a breadth of occupational preparation for manufacturing, wholesale, and retail trade, and various government, business and personal services.
   e. That occupational counseling for youth and adults should be a major service at each center.
   f. That the area centers should provide:
      intensive occupational education for high school graduates or dropouts without occupational preparation.
      quality occupational preparation for those still in high school.
      re-training.
      supplementary training part-time for employed persons who need updating or desire advancement.
   g. The area facilities should be constructed or renovated with quality education in mind.
4. In the event that consolidation of the three intermediate districts cannot be achieved, the alternative is:
   a. Calhoun Intermediate District should proceed with development of a center or centers.
   b. Branch and Barry Intermediate School Districts should be encouraged to proceed with the development of their own programs.
5. A committee should be established by joint action of the community colleges and the local school districts to coordinate course offerings and to avoid needless duplication of effort at each level.
6. All curriculums offered in the area centers should be established only after an in-depth study. Advisory committees should actively participate in study and development of the curriculum.
7. The funds for the capital and operational expenses of the area vocational centers should be provided by the Intermediate Districts(s). State, Federal, or private funds should be channeled through the Intermediate School District(s).
8. Secondary students enrolled in area centers should continue in their home high schools for purposes of general studies, athletics, activities, etc., and should receive their secondary school diploma from their home high school.
9. The Intermediate School District shall contract with an existing district for the construction of facilities and operation of area vocational centers.
10. Any contract for the construction of facilities and operation of area vocational centers shall specify that policies shall be recommended to the contracting district by an advisory board composed of school administrators, members of boards of education, representatives of business, industry, and labor, representing all participating K–12 school districts, said advisory board to be appointed by the board of education of the intermediate school district.

1

Introduction

A Problem Recognized

"All over America, school personnel and community leaders are increasingly realizing the need for more and better vocational-technical training for employment bound youth, school "drop-outs", and adults who must learn new skills to compete in the changing job mart. Here in Southwestern Michigan, as early as 1962 several area school administrators attended a series of seminars sponsored by the Flint Public Schools and by the Mott Foundation which has pioneered the concept of schools as centers of community life. These seminars concentrated on the study of educational needs of disadvantaged youth. What can we do to resolve the situation, including ways to persuade communities to change in order to meet this and other complex problems?

"Those Calhoun County school superintendents who have been involved in the seminars soon had the conviction that *the whole community, not just the schools,* had to tackle the task of educating youth for a world where unskilled labor is almost unsalable. Local leaders have the obligation to provide varied and practical training for youngsters who will not graduate from college, and such training must make every child employable as he reaches the labor market. A big problem for our area, they foresaw, and the thought further struck them that where one county might not singly have the resources for an adequate program, a combination of counties or intermediate school districts might share the burdens and the potential gains.

"Individual school systems, on their own, likely could not afford fully to support the competent faculty and specialized facilities demanded for today's technical and industrial training. However, in a multi-county area there could be sufficient financial resources and students to support an adequate program. And even though in some localities business and industry improve and upgrade apprentice programs, there are youth (and adults) who will not be prepared for employment unless area schools offer such training. Required is the cooperation of schools, business, industry, labor, *the community as a whole.* One example of such cooperative action could revolve around the possibility of arrangements whereby community colleges in the area might serve as centers for vocational training of youth of adjoining counties.

"The evolving over-all idea was discussed with school administrators in several counties and also with representatives from the Michigan Department of Public Instruction, the University of Michigan, and Michigan State University. The idea struck fire with educators at local, county, and state levels and by late summer of 1963 the boards of education of the intermediate school districts of Barry, Branch, Calhoun, and Eaton Counties approved a tentative plan of procedure. A grant of $2,500 to finance a series of meetings to perfect a design for action was requested and received from the Olivet College Community Development Fund. This sum was to be matched by the participating school districts. Thus there could be a realistic local response to the recommendation of a federal President's Panel that steps should be immediately taken on local, regional, and state levels to meet the national need for stepped-up vocational-technical education.

The "Committee of 100"

"From the four counties, a Committee of 100--representing a broad range of community leaders, trades, and professions---was chosen to study thoroughly such questions as:

- Do the increasing mechanization and automatization of business, industry, and agriculture indicate a pressing need in the area for more and better vocational-technical education?

- Do many of our youth have to leave the area for such education?
- Are there enough educational and financial resources to warrant the creation in our communities of more adequate "skill centers"?
- Will the citizens of each of the four counties acknowledge a responsibility for such creation?
- What pattern or design of action will prove most practical?

"From October of 1963 through May of 1964, eight full-day sessions were faithfully attended by the hundred citizens, and after individual and subcommittee study literally aggregating "thousands of hours", a series of pertinent recommendations were discussed and adopted at a meeting on June 27. This "final meeting" was actually not at all a terminal one, for there was unanimous approval of the naming of an *area implementation committee* to follow through on translating the committee recommendations to "real life" throughout the four counties."[1]

Blueprint For Action

As stepping stones from theory to practical accomplishment, a digest of the recommendations was prepared and published under the title BLUEPRINT FOR ACTION. Persons wishing details of the discussions leading up to these recommendations should examine "The Definitive Report of the Committee of 100" which is available in all public and high school libraries and in local Chambers of Commerce within Barry, Branch, Calhoun, and Eaton Counties.

In the air during the committee deliberations was the attitude "We must find some new approaches to a problem that must be solved. Youth must have confidence and hope for the future through modern, streamlined training leading to worthwhile jobs."

Following are some of the highlights of the discussions and/or adopted recommendations:

- There was universal acknowledgement that there are grave shortcomings in the job education efforts of the schools in the four counties.
- Nevertheless, these schools can become effective centers to provide education to prepare people for a society which has small place for the untrained.
- Business, industry, and labor should accelerate on-the-job training, using plant facilities and teaching by men experienced on specific machines.
- The training should be flexible, meeting a wide range of community needs, and including short courses as well as courses skilled and technical in nature.
- Investigated in the four-county area should be the feasibility of making community colleges "skill centers", with terminal divisions offering wide and varied vocational-technical education and with the four counties serving as a tax base for a sharing of the costs and support.
- The schools in the area should cooperate in providing adequate vocational experiences by exchanging students between schools specializing in certain vocational programs.
- A system of transportation should be cooperatively developed among school districts for students attending vocational training programs outside of their own school districts.
- Training programs for employment-bound youth should be flexible so that students would remain in school until a salable skill is developed regardless of traditional graduation policies.
- Cooperative training programs (on the job training) should be expanded to provide every employment-bound youth with a realistic vocational experience outside of the school.
- Schools should utilize personnel (who are not certificated teachers) from business, labor and industry for instructional purposes in training employment-bound youth. Steps should be taken to liberalize the certification process so that these personnel could be used for instructional purposes.
- Trained adults in the professions and trades should be used in advisory and consultation roles to familiarize students with trade and professional requirements at a much earlier chronological age, preferably no later than the ninth grade.
- Opportunities for the drop-out and unemployed adults who failed to finish high school should be provided so that they may return to a program designed for their needs and abilities leading toward a high school diploma.
- The school day, week and year should be extended to meet the need of today's demand on the public schools.
- Flexibility should be provided in the school day to permit longer or shorter blocks of time to meet student needs and interests. The rigidity of the semester concept should not deter the establishment of vocational training program.
- Teacher-pupil loads must be adjusted upward or downward as determined by the nature of the vocational program.
- General educational courses for the employment-bound youth should be oriented in content and method of instruction to their needs as different from the college preparatory courses.
- Counselors should be well trained, full-time personnel and the pupil counselor ratio should be no more than 250 to 1 at the junior and senior high school level. Counselors should have adequate paid clerical assistance.
- Special attention should be given to the guidance of the student who plans to enter employment directly from high school. It must be the responsibility of each counselor to be just as well prepared and willing to aid the employment-bound youth as he is to assist the college-bound one.
- School guidance personnel should involve parents in the guidance and counseling programs of youth.
- A foundation grant should be sought

---

[1] The six preceding paragraphs are reproduced in their entirety from the Committee of 100 Report, BLUEPRINT FOR ACTION, pp. 1–3.

to make a pilot project study through a Community College, of area Skill Centers, as outlined in the bulletin prepared by the Michigan Council of Community College Administrators.

- The Community Colleges or any other agency should be used as a contractual party through which vocational education programs may be offered.
- Additional funds should be found to implement the recommendations of the Committee of 100.
- A better balance and use of present funds should be effected by all school districts as it applies to college-bound and employment-bound youth.
- The Intermediate School District should be the taxing unit for vocational education and act as the contracting agent only in providing training programs for employment-bound youth.

The Subsequent Study

During the autumn months of 1964, the Implementation Committee began its assignment. Membership consisted of the twenty participating high school districts located in Barry, Branch, Calhoun and the southwest portion of Eaton County. The remainder of Eaton County had decided during the summer of 1964 to affiliate with a similar project in the Lansing area. The Implementation Committee quickly agreed there was need for more detailed information upon which to base their planning. An application was filed with Michigan Division of Vocational Education for the funding of an area study under the provisions of the Vocational Act of 1963.

Recommendations will be aimed at meeting the vocational-technical edudation needs of the following clientele:

- The high-school graduate not seeking, or not suited for, professional or semi-professional preparation,
- The high school student in need of specialty courses,
- The high school drop-out in need of job entry skills,
- The employed adult in need of up-dating, up-grading, or re-training,
- The unemployed adult in need of salable skills,
- The handicapped person seeking self-sufficiency.

The pages which follow present the findings and recommendations based upon the subsequent Skilled Manpower Survey of the region beginning in April, 1965.

Summary

Community leaders and school personnel across the nation are recognizing the need for more and better training for employment bound youth, school drop-outs, and adults who must learn new skills to compete in a world where unskilled labor is almost unsalable. Employment bound youth must have education on a par with that offered college bound youth.

Calhoun County school superintendents began discussing the problem as early as 1962. By the autumn of 1963, a Committee of 100--representing a broad range of community leaders, trades, and professions from the four county area--began to study the problem. A series of recommendations were discussed and adopted on June 27, 1963.

Implicit in all the discussions and recommendations is an awareness of the need to:

1) bring together students with special training needs. This will make it possible to justifiably support the competent faculty and the specialized facilities necessary to adequately ready youth and adults for today's skilled job market,
2) develop a cooperative working relationship between secondary schools, intermediate districts, and the community college,
3) provide an adequate, broadened base of financial support.

This subsequent study of the region is undertaken to produce more detailed information upon which to base further planning.

2

Definitions, Concepts, Background Information

The purpose of this subsequent study is to provide detailed information upon which to base the planning for more and better vocational-technical training for employment bound youth, school "drop-outs", and adults who must learn new skills to compete in our changing job market. The purpose of this chapter is to present definitions of some terms common to vocational education, to introduce the concept of area programs in vocational education, and to develop the background for the chapters which will follow.

Definitions of Terms

OCCUPATIONAL EDUCATION refers to any and all education and training offered as preparation for employment at the professional, semiprofessional, technical skilled, and semiskilled levels in all fields of employment.

SEMIPROFESSIONAL EDUCATION is represented by formal curriculums leading to the associate degree in a community college or technical institute. It is designed to prepare the student for employment in career fields nearly professional in status and for work in close cooperation with a professional person. Some examples: engineering technician, medical technician, data processing programmer.

TECHNICAL EDUCATION is a relatively new term. It is used to refer to some aspects of semiprofessional education. It emphasizes work in science and mathematics, and frequently, but not always, is related to industry and engineering. It gives much attention to technical knowledge and general education, but also stresses practice and skill in the use of tools and instruments. It is usually a two-year curriculum leading to an associate degree.

VOCATIONAL EDUCATION, in the general sense, is education and training to prepare students for employment or for a career. Until recently, vocational education has been associated with high school and vocational (or trade) school preparation for skilled and semiskilled occupations. Recently community colleges have begun to offer course work for skilled and semi-professional occupations. Community college courses are measured in terms of semester hours; vocational and trade school courses in terms of clock hours of instruction.

AGRICULTURAL EDUCATION offers preparation for employment in occupations involving producing, processing and marketing products from and for farms. These occupations include farmers, dairymen, feed and seed workers, farm implement workers, etc.

HOME ECONOMICS EDUCATION has long sought to prepare persons for effective homemaking and family life. Since 1963, home economics education has taken on a new dimension--preparation for related wage earning occupations such as child day-care and food service workers.

OFFICE EDUCATION aims at preparation for office occupations involving clerical, stenographic, secretarial, accounting, data processing, and office management positions.

DISTRIBUTIVE EDUCATION provides information, skills, and attitudes that prepare persons for employment in wholesaling, retailing, and the service industries. Approximately 20% of the national labor force is employed in distributive occupations. Included are workers in areas such as advertising, transporting, insurance, banking, feeding and lodging.

TRADE AND INDUSTRIAL EDUCATION aims at preparing persons for employment in manufacturing or service occupations at the skilled and semi-skilled levels. This sometimes, but not always, involves apprenticeship. Included are machinists, printers, auto mechanics, carpenters, electricians, masons, etc.

INDUSTRIAL ARTS EDUCATION at the junior and senior high school levels has two broad purposes:

a) gives all students an understanding of industry, its materials, processes and products,
b) serves as a pre-vocational program, especially as preparation for Trade and Industrial Education courses.

The recommendations of the "Committee of 100" and the preceding definitions have pointed out that a comprehensive program of vocational-technical education offers preparation at many different levels, ranging from college-level engineering technology to courses for semi-skilled food service workers.

All are necessary to accomodate the needs of business and industry and also the abilities and interests of students.

The necessity for several levels of preparation has resulted in much confusion over the quality of the programs. It is, therefore, appropriate to add two more definitions.

LEVEL of a training program is determined by its objectives--its aims or goal.

QUALITY of a program is measured by how well the program achieves its objectives.

Using these definitions it is quite possible for a program designed to prepare waitresses to be of equal or higher quality than one preparing accountants. The difference in level, however, is obvious.

The Concept of Area Vocational Education Programs

The discussions and recommendations of the Committee of 100 pointed up an awareness of the need to:

1) bring together students with special training needs. This will make it possible to justifiably support the competent faculty and the specialized facilities necessary to adequately ready youth and adults for today's skilled job market.
2) develop a cooperative working relationship between secondary schools, intermediate districts, and the community college.
3) provide an adequate, broadened base of financial support.

These three needs are at the heart of the concept of establishing vocational education programs on an area basis. This concept is explored in the fifteen page Publication Number 53.4, *Background Information Concerning Area Vocational Education Programs,* Division of Vocational Education, Department of Public Instruction, Lansing, Michigan, 1963. Some of the information is particularly pertinent to this study and is reproduced in the paragraphs which follow:

"It must be recognized that only a fraction of the total number of new workers who require additional education can be trained in existing vocational education facilities. Furthermore, it must be recognized that only a comparatively small proportion of the youths and adults who are interested in, qualified for, and able to profit from vocational education have an opportunity to take advantage of such instruction because of the remoteness of training centers from their place of residence, inadequacy of the range of vocational offerings in certain schools, and other limiting factors.[2]

"The area concept in vocational education is based upon the philosophy that all persons who can profit by the instruction should have an equal opportunity to enroll in vocational education programs of their choice regardless of where they live.

"The area concept required that the attendance area be of sufficient size to insure adequate enrollments. Administrative patterns and financial structures must be developed on as wide a base as possible and feasible. In order to accomplish this, it is often necessary to cut across or replace existing organizational patterns.

"An area vocational program offers many advantages:

It provides for a broad tax base distributed over large segments of the population; it offers training opportunities to greater numbers of persons than is possible in small schools serving individual communities; it makes possible a broader administrative base and more comprehensive auxiliary services; it makes available a greater range of curriculum offerings and therefore a greater range of occupational training choices for residents in the area; it avoids duplication of equipment services and costs such as might prevail if a number of neighboring communities chose to offer similar training programs; and it provides for a flexibility in operation that makes it possible to make rapid program adjustments and to meet emergency training needs quickly.[5]

"Most Michigan high schools are unable to offer truly comprehensive programs for two reasons: (1) They lack sufficient numbers of students, and (2) they lack sufficient financial resources. Both of these are related directly to the size of school. For these reasons small schools cannot justify offering a variety of courses to warrant specialized teachers, supervisory personnel, adequate counseling and placement services, or vocationally-trained administrators to meet the needs of all youth. If most Michigan school districts are to provide adequate educational programs to meet the needs of employment-bound youth, they will have to find some way of combining their resources.

"A recent study of area vocational education programs in ten selected states indicates four rather common types of organizational patterns. These are: (1) Two or more local school districts cooperatively operating such programs, (2) the operation of such programs on a county-wide basis, (3) the operation of such programs by two-year community colleges on an area basis, and (4) state operated and administered schools or centers for such programs.[20] In addition, the U.S. Office of Education has published a summary of states of area vocational program developments.[21]

"These two studies provide many examples of the various organizational patterns for area vocational education programs. A brief description of a few of these will serve to illustrate the four basic organizational arrangements.

"The Bucks County Technical School, located in Bucks County, Pennsylvania, is a vocational-technical training service center for seven cooperating school districts. The board of control for this unit is composed of all the board members of the seven participating school districts. This board meets twice yearly to approve the budget and elect officers. Regular monthly meetings are delegated to a board committee of thirteen members. Students attend this technical school for all their vocational work--all academic subjects are provided in the home high school. Students retain their identity with and graduate from their home high school. Shop and laboratory facilities are provided for training in 18 occupational areas for both high school students and adults in the attendance area.

"Several states operate area vocational-technical programs on a countywide basis. The Sussex County Vocational-Technical Center, in Delaware, is an example of this type school. This center serves the students from 13 different feeder high schools in the county. A Board of School Trustees has the responsibility for selection of personnel, development of program, and its operation. This board is directly responsible to the State Board of Education.

---

[2] U.S. Office of Education, *Vocational Education in the Next Decade--Proposals for Discussion,* 1961, p. 69.

[5] U.S. Office of Education, *Vocational Education in the Next Decade,* p. 71.

[20] Michigan Department of Public Instruction, Division of Vocational Education. *A Survey of Selected Area Vocational Education Programs in the United States.* Lansing, Michigan: the Department, 1963. Mimeo.

[21] U.S. Office of Education, Division of Vocational and Technical Education. *Summary by States of Area Vocational School Developments.* Washington: U.S. Office of Education, 1962. Mimeo.

"California, with its 67 junior colleges, has been a leader in the junior-community college movement. Each of these junior colleges, by statute, provides for a variety of vocational-technical areas of training. These institutions serve in part as area vocational-technical schools. Increasingly, certain of these two-year colleges are concentrating in depth upon particular occupational preparation programs. These institutions are creating "area programs" whereby, through inter-district attendance agreements, students may select training outside their normal attendance areas. An interesting development in California has been the trend toward the use of junior college vocational-technical facilities on an area basis by high school students in the 11th and 12th grades.

"Several states have a system of state-operated vocational-technical schools. Kentucky has a number of these schools. The area vocational school located at Ashland, Kentucky, serves seven counties. This school is under the direct control of the State Board of Education and is administered by the Division of Vocational Education of the State Department of Education.

"Act No. 190, of the Michigan Public Acts of 1962, known as the Intermediate School District Act, has implications for area vocational education programs. This Act continues to make provision for the operation of special education programs by and through the intermediate district. While not mentioning vocational education specifically, the Act does provide for the intermediate district to "Direct, supervise, and conduct cooperative educational programs in behalf of the constituent school districts which request such services."[26] It is assumed that this provision could include vocational education programs on an area basis.

"Two or more school districts are authorized to jointly operate educational programs:

> For the purposes of this act "municipal corporation" shall mean any county, township, charter township, city or village, school district, . .
>
> Any municipal corporation shall have power to join with any other municipal corporation, or with any number or combination thereof by contract, or otherwise as may be permitted by law, for the ownership, operation, or performance, jointly or by any one or more on behalf of all, of any property, facility or service which each would have the power to own, operate or perform separately.[29]

"The above existing legislation has implications for the development of area vocational education programs in Michigan. However, there is no specific legislation which authorizes the establishment and operation of such programs. The administration of cooperative arrangements for vocational education between school districts is often exceedingly difficult.

"Adequate educational opportunities for employment-bound youth are not generally available in Michigan schools. If most Michigan school districts are to meet these needs, they will have to find some way of combining their resources. At the present time, some 60 per cent to 80 per cent of all Michigan students who enter the ninth grade will have to secure some type of specific occupational preparation short of a four-year college degree. Records indicate that roughly one-third of those entering the ninth grade fail to graduate from high school. Another one-third do not continue their education beyond high school. Of the remaining one-third who continue their education, approximately one-half do not secure a four-year college degree.[33]

"If Michigan should develop a system of area vocational education programs, the organizational patterns might take several forms. The best administrative arrangements for one area of the state might not be feasible for all other areas.

"In many respects, Michigan is fortunate in not having developed area vocational programs. There is no existing pattern which would hamper the development of such programs in any desirable direction. It is conceivable that area programs could be developed in some sections of the state by the cooperative efforts of two or more school districts, in other areas by the intermediate school district for constituent districts, and in still others, by community colleges for both high school and post high school youth.

"Many unresolved questions need to be answered before Michigan determines the most desirable direction to go in the further development of vocational education. Is the concept of area vocational education programs acceptable to educational leaders in the state? If so, what type of organizational patterns are most desirable? What areas of the state could logically form a geographical base for area programs? Should administrative patterns for vocational education in the larger metropolitan areas be different from sparsely populated areas? What kind of vocational education should be offered at the high school level? What kind should be provided at the post high school level? These are but a few of the critical questions which must be answered.

"When the time comes, as it surely will, when virtually all of our students achieve high school graduation, most of their specialized occupational training should be given at the post high school level. However, at the present time, approximately two-thirds of our youth complete their formal education at or before high school graduation. Half of these do not achieve high school graduation. We must provide occupational preparation programs for these students while they are still in school.

"We must keep in mind that eventually young people will prepare themselves for an occupation after they complete high school. As we develop curricula and build facilities, we must do so with the future in mind. If area vocational education programs are developed in Michigan, such programs should be closely coordinated with post high school occupational programs in the community colleges of the state."

It should be noted that the area concept for vocational education will not replace the typing, home economics, and similar courses now offered in each high school. These courses should be retained as general electives available to all students including the college preparatory. The present business, industrial arts, home economics, and agriculture courses also offer an excellent opportunity for a student to "check out" his various interests. They also provide excellent background preparation for the more advanced, specialized courses in the area center. The area center, then, expands and supplements the present offerings.

---

[26] State of Michigan, 71st Legislature. *Public Acts of 1962. Act No. 190.* Lansing, 1962.

[29] State of Michigan. *General School Laws.* Section 1175-76.

[33] Michigan Department of Public Instruction. Unpublished records.

Summary

Occupational education refers to any and all education and training offered as preparation for employment at the professional, semiprofessional, technical, skilled and semiskilled levels in all fields of employment. Vocational education in its broadest sense is education and training for employment. Commonly it has been associated with high school, vocational, or trade school preparation for skilled and semiskilled occupations.

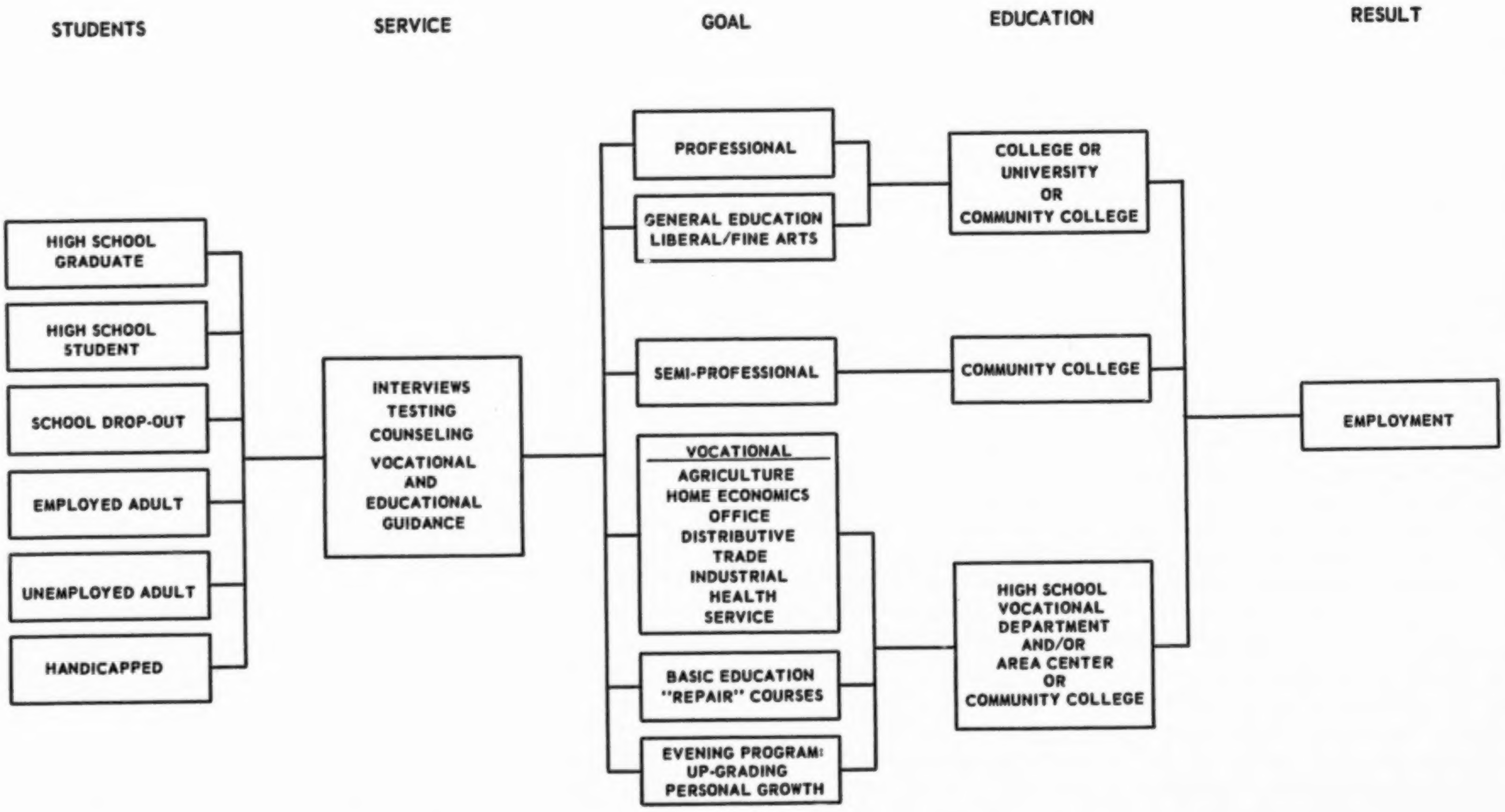
Necessity for several levels of preparation has resulted in much confusion over quality of training programs. The level of a training program is determined by its objectives. The quality is measured by how well the program achieves its objectives. Thus, it is quite possible for a program designed to prepare waitresses to be of equal or higher quality than one preparing accountants. The difference in level, however, is obvious.

Most Michigan high schools are unable to offer truly comprehensive programs for two reasons: (1) They lack sufficient numbers of students, and (2) they lack sufficient financial resources. The area concept combines resources of several districts to insure adequate enrollments, provide a wider range of course offerings, avoids duplication of equipment and instructional costs in neighboring communities, and provides a broader tax base.

There are four common ways to organize area vocational education programs. (1) Two or more local school districts cooperatively operating such programs, (2) the operation of such programs on a countywide basis, (3) the operation of such programs by community colleges on an area basis, and (4) state operated centers for such programs.

FIGURE 1

Paths For Students Entering Employment


STUDENTS
SERVICE
GOAL
EDUCATION
RESULT
HIGH SCHOOL GRADUATE
HIGH SCHOOL STUDENT
SCHOOL DROP-OUT
EMPLOYED ADULT
UNEMPLOYED ADULT
HANDICAPPED
INTERVIEWS TESTING COUNSELING VOCATIONAL AND EDUCATIONAL GUIDANCE
PROFESSIONAL
GENERAL EDUCATION LIBERAL/FINE ARTS
SEMI-PROFESSIONAL
VOCATIONAL
AGRICULTURE
HOME ECONOMICS
OFFICE
DISTRIBUTIVE
TRADE
INDUSTRIAL
HEALTH
SERVICE
BASIC EDUCATION "REPAIR" COURSES
EVENING PROGRAM: UP-GRADING PERSONAL GROWTH
COLLEGE OR UNIVERSITY OR COMMUNITY COLLEGE
COMMUNITY COLLEGE
HIGH SCHOOL VOCATIONAL DEPARTMENT AND/OR AREA CENTER OR COMMUNITY COLLEGE
EMPLOYMENT

3

Youth Express Their Views

Any study to gather background material for an improved educational system should include a review of the students to be served. In this subsequent study, it was decided to survey by confidential questionnaire students from each of the twenty participating high schools.

Most surveys of high school seniors reveal some unrealistic aspirations. They usually indicate about 40% of seniors aspire to the professions which account for less than 15% of the employment.

In hopes of receiving more realistic answers regarding career plans, it was decided that students were not to be surveyed until after they had left high school. A good response, however, seemed to depend upon recent ties to the school. The decision was made to contact all 1964 graduates plus school leavers of the year 1963-64. Administrators became interested in this follow-up study, requested and were promised confidential reports for each school.

A total of 2567 graduates and 274 school leavers were sent original and follow-up mailings. The post office returned 180 as non-deliverable. Of the 2661 successful contacts, replies were received from 949 for a 36% response. It should be noted that this is a partial return on a universe sampling, not a statistically derived random sampling. The resulting data, then, should be used as trends and suggestions rather than definitive answers.

Replies were separated into those who became college students and those who entered employment. Of the 949 replies, 495 were from college students and 454 from employed youth for a 52 and 48% respective composition.

Most of the youth participating in the survey were age 19. More females than males responded to the questionnaire. Sixty-one per cent of the employed youth and fifty-six per cent of the college students were females. Twenty-nine per cent of the employed youth were married as compared to less than four per cent of the college students. Thirteen per cent of the employed youth category were parents. Other data is shown in Tables 1 and 2.

TABLE 1

Age of Participants--Student Interest Inventory: Summer, 1965

Age	College Students	Employed Youth
18 and under	105	87
19	370	295
20	17	55
21	1	13
22 and over	2	4
	495	454

Source: Student Interest Inventory, Skilled Manpower Survey: 1965.

TABLE 2

Personal Data of Participants: Summer, 1965

	Sex		Marital Status		Have Children?		
Participants	Male	Female	Married	Divorced	Yes	No	No Response
College Students	241	254	18	0	4	379	112
Employed Youth	179	275	131	6	59	274	121

Source: Student Interest Inventory, Skilled Manpower Survey: 1965

As one would expect, nearly all the college students group followed the college preparatory curriculum. It is significant that twenty-three per cent of the employed youth had also pursued a college preparatory curriculum rather than one of the general or vocational programs. Does this indicate unrealistic career aims or delayed college plans? In part, yes. Likely, too, this is an indication of the frequently noted lack of "status" or "prestige" in many vocational programs. The total responses in Table 3 exceed the participants indicating that some students checked more than one curriculum.

TABLE 3

Curriculum Followed During High School

Curriculum	College Student	Employed Youth
College Preparatory	400	106
General	46	178
Vocational	11	25
Agricultural	9	19
Business & Office	34	128
Distributive	0	9
Home Economics	2	26
Trade & Industrial	7	23

Source: Student Interest Inventory, Skilled Manpower Survey: 1965.

TABLE 4

Highest Grade Completed

Grade	College Student	Employed Youth
9	—	2
10	—	10
11	—	26
12	111	396
13	359	—
14	13	—
No Response	12	20
	495	454

Source: Student Interest Inventory, Skilled Manpower Survey: 1965.

Table 4 indicates the highest school grade completed at the time of the survey. Many of the student category permitted some time to elapse between high school and college. At the time of the survey they were enrolled in grade 13 but had not yet completed it. This explains the large vote for 12th grade completion among this group. Thirteen students indicated they had completed grade 14. It seems more likely they were enrolled in grade 14 at the time the study was conducted. Only one year had elapsed since their graduation from high school. The overwhelming majority of the employed youth who participated were high school graduates.

There were 38 non-graduates participating in the study. Each had one or more reasons for leaving high school with the desire to become married being the most frequently cited.

TABLE 5

Reasons for Leaving High School

Reasons	Responses
Had to work	5
Encouraged to Work	3
Wanted to Earn Money	10
Received Job Offer	2
Lacked Ability in School	4
Lacked Interest in School	9
Couldn't Get Practical Courses	4
Asked to Leave by School Authorities	4
Entered Military Service	6
Wanted to Get Married	15
Were in Poor Health	5
Had Family Problems	11
Other	6

Source: Student Interest Inventory, Skilled Manpower Survey: 1965.

Thirty per cent of the employed youth participating in the study had held two or more full-time jobs during the preceding year. A large number of college students reported summer jobs. The survey occurred during the second summer following high school graduation. This would permit some to have held two full-time jobs during summer months. Table 6 presents other facts.

TABLE 6

Full-Time Jobs Held in Last Year

Jobs Held	College Students	Employed Youth
0	179	54
1	204	246
2	52	103
3	9	24
4 or more	6	9
No response	45	18
	495	454

Source: Student Interest Inventory, Skilled Manpower Survey: 1965.

One question asked in the Student Interest Inventory sought to determine how students and youth were presently occupied. Each respondent could check one, two, or more of the eight categories provided. Table 7 shows responses. A few of the student group had completed some college and were now in military service. Several youth had completed some employment before entering the military. Significantly, many of the youth who entered employment upon leaving or completing high school were now engaged in additional schooling. This may represent some of the 106 youth in this category who pursued a college prep curriculum in high school. (See Table 3). Seventy of the 454 non-college category (15.4%) were currently unemployed or on layoff.

TABLE 7

Present Occupation of Participants

Occupation	College Student	Employed Youth
Attending school full-time	407	12
Attending school part-time	24	33
Employed full-time	107	300
Employed part-time	161	34
Unemployed	66	60
On layoff	6	10
In military service	7	33
Other (housewife, etc.)	10	71

Source: Student Interest Inventory, Skilled Manpower Survey: 1965.

Youth who entered employment upon leaving or completing high school were asked a series of questions about the relationship and effectiveness of their school training to their present job. Three hundred thirty-nine youth participated in this series of questions. Table 8 indicates a ratio in excess of two to one did not locate in employment for which they received specific school training. This is not surprising since previous data indicated twenty-three per cent of the employed youth participating had pursued a college preparatory curriculum. An additional thirty-nine per cent followed a general curriculum. A majority felt their school training was helpful in getting their first job but did not feel it helped get a first job with more pay or on a higher level than those without such training.

TABLE 8

Relationship and Effectiveness of School Training to Job

N - 339

	Employed youth		
	Yes	No	No Response
Is your present job			
1. one for which you received specific school training?	91	210	38
2. one related to that for which you trained?	140	162	37
Was your school training helpful			
3. in getting your first job?	202	137	0
4. in getting a first job with more pay or on a higher level?	105	168	66
5. in getting promotion on the job?	71	187	81

Source: Student Interest Inventory, Skilled Manpower Survey: 1965.

TABLE 9

Liking For Present Job

N = 339

	Employed youth		
	Yes	No	No Response
Do you			
1. find tasks interesting?	281	56	2
2. feel satisfied with the work?	228	111	0
3. feel salary is satisfactory?	199	132	8
4. find the hours satisfactory?	275	64	0
5. like the working conditions?	259	76	4
6. feel an opportunity to advance?	193	137	9
7. expect to seek a new job within the year?	121	202	16

Source: Student Interest Inventory, Skilled Manpower Survey: 1965.

This group of employed youth were then asked how they liked their present job. The 339 participants in this series of questions seemed in general to be satisfied with their position. The greatest dissatisfaction was in opportunity for advancement (40%) followed closely by unsatisfactory salary (39%) and dissatisfaction with the work (33% of the respondents).

A valuable contribution to this regional study is provided in a report prepared by the U.S. Department of Labor. Their report presents information on the entry jobs obtained by the nation's employment bound youth--both high school graduates and dropouts. Some guidelines for establishing training programs are revealed. For example, sixty-three per cent of the female graduates find entry employment in one major occupational group --clerical! In addition, eleven per cent of all dropouts are employed in this group. Thirty-one per cent of the male graduates and twenty-three per cent of the male nongraduates find entry employment as operatives. An additional eighteen per cent of all nongraduates find employment as service workers. See Table 10 for additional information.

TABLE 10

Employment Status and Major Occupation Group of the Nation's June, 1961, High School Graduates Not Enrolled In College and Nongraduates Who Dropped Out of School In 1961, By Sex, October 1961

Employment status and major occupation group	June 1961 high school graduates			Nongraduates who dropped out of school in 1961		
	Both sexes	Male	Female	Both sexes	Male	Female
Civilian noninstitutional population (thousands)	916	345	571	354	179	175
In labor force						
Number (thousands)	730	297	433	239	150	89
Percent of population	79.7	86.1	75.8	67.5	83.8	50.9
Employed						
Number (thousands)	599	242	357	175	108	67
Unemployed						
Percent of labor force	17.9	18.5	17.6	26.8	28.0	*
Percent distribution of employed by occupation	100.0	100.0	100.0	100.0	100.0	*
Professional, technical, and kindred workers	1.5	—	2.5	1.1	1.8	*
Managers, officials, and proprietors, except farm	.2	.4	—	—	—	*
Clerical and kindred workers	41.6	9.9	63.2	11.4	7.3	*
Sales workers	5.7	4.5	6.5	4.5	3.6	*
Craftsmen, foremen, and kindred workers	4.2	9.9	.3	2.8	4.5	*
Operatives and kindred workers	18.2	31.0	9.6	17.0	22.7	*
Private household workers	2.8	—	4.8	9.7	1.8	*
Service workers, except private household	8.7	6.6	10.1	18.2	12.7	*
Farmers, farm managers, laborers, and foremen	7.5	14.0	3.1	24.4	28.2	*
Laborers, except farm and mine	9.5	23.6	—	10.8	17.3	*

*Percent not shown where base is less than 100,000.

Source: U. S. Department of Labor, Bureau of Labor Statistics, Advance Summary Special Labor Force Report, "Employment of 1961 High School Graduates and Dropouts," October 1961, p- 4.

TABLE 11

Requests For Training By Regional Youth (in order of frequency)

Occupation
Secretary
Electronic Data Processing Operator
Accountant
Receptionist
Registered Nurse
Beautician
Commercial Artist
Clerk-typist
Bookkeeper
Drafting & Design Technician
Medical Lab Technician
Practical Nurse
General Office Worker
Buyer
Medical Office Assistant
Automobile Mechanic
Stenographer
Draftsman
Die Maker
Dental Office Assistant
Sales Manager
Office Manager

Source: Student Interest Inventory, Skilled Manpower Survey: 1965.

The closing section of the Student Interest Inventory asked participants to look through a list of 188 occupations. (The employer phase of the Skilled Manpower Survey was based upon these same occupations.) They were then asked to indicate an interest in additional training for any of them.

In light of the entry jobs obtained by the nation's employment bound youth (Table 10) it is not surprising that clerical and service occupations dominate the requests. Table 11 presents the top requests, in order of frequency, by our region's youth.

Summary

Nine hundred forty-nine graduates and dropouts from the twenty participating districts contributed views on their first year out of high school. Replies were separated into those who became college students (495) and those who entered employment (454).

Among the employed youth, 29% had married--13% were parents. Twenty-three per cent of the employed youth had pursued a college preparatory curriculum rather than a general or vocational curriculum. During the first year, 30% had held two or more full-time jobs--15% were currently unemployed or on layoff. Significantly, ten per cent were now engaged in some form of additional schooling. In reference to their current job, 40% felt no opportunity for advancement--39% were dissatisfied with their salary --33% were dissatisfied with the work.

Nationally, 63% of female graduates and 11% of all dropouts find entry employment in clerical occupations. Thirty-one per cent of all male graduates and 23% of the male dropouts find entry employment as operatives. Eighteen per cent of all nongraduates find employment as service workers. It is not surprising, then, to find that clerical and service occupations dominate the requests for additional training by our region's youth.

4

Employers Detail Their Needs

National and State Labor Market Trends

The national labor force will increase nearly 20% during the 1960's to a total of 87 million persons. Workers under 25 will account for 46% of this growth. One out of three workers will be a woman.

The state labor force will increase from 2.9 million in 1960 to 3.7 million in 1970. Sixty per cent of this growth will be from workers under age 25. Women will account for 30% of the labor force. The labor force in this four-county area in 1960 was 98,392 with an increase to 117,000 anticipated by 1970.

The United States has a highly mobile labor force. Eight million workers made 11½ million job changes in a recent year. Two-thirds of these changes were to a completely different industry, while about one-half were to a completely different occupation. Seven per cent of all male workers are now living in a county different from the one in which they were living a year before!

The number of employees in service industries now out-numbers those in production industries. Production industries include all workers engaged in manufacturing, agriculture, construction, and mining. Service industries include all--except the self-employed--working in trade, government services, transportation, communication, utilities, finance, real estate, insurance and all other services except domestic.

As our technology advances, proportionately fewer workers will be required to produce the goods we need. At the same time, more workers will be needed to provide the increasing services required by a rising standard of living. By 1970, production type employment will increase 17%--service type employment will increase 30%.

In the four county area, service workers have exceeded production workers since the late 1950's. The difference is undoubtedly greater than average in this area due to the presence of large governmental installations.

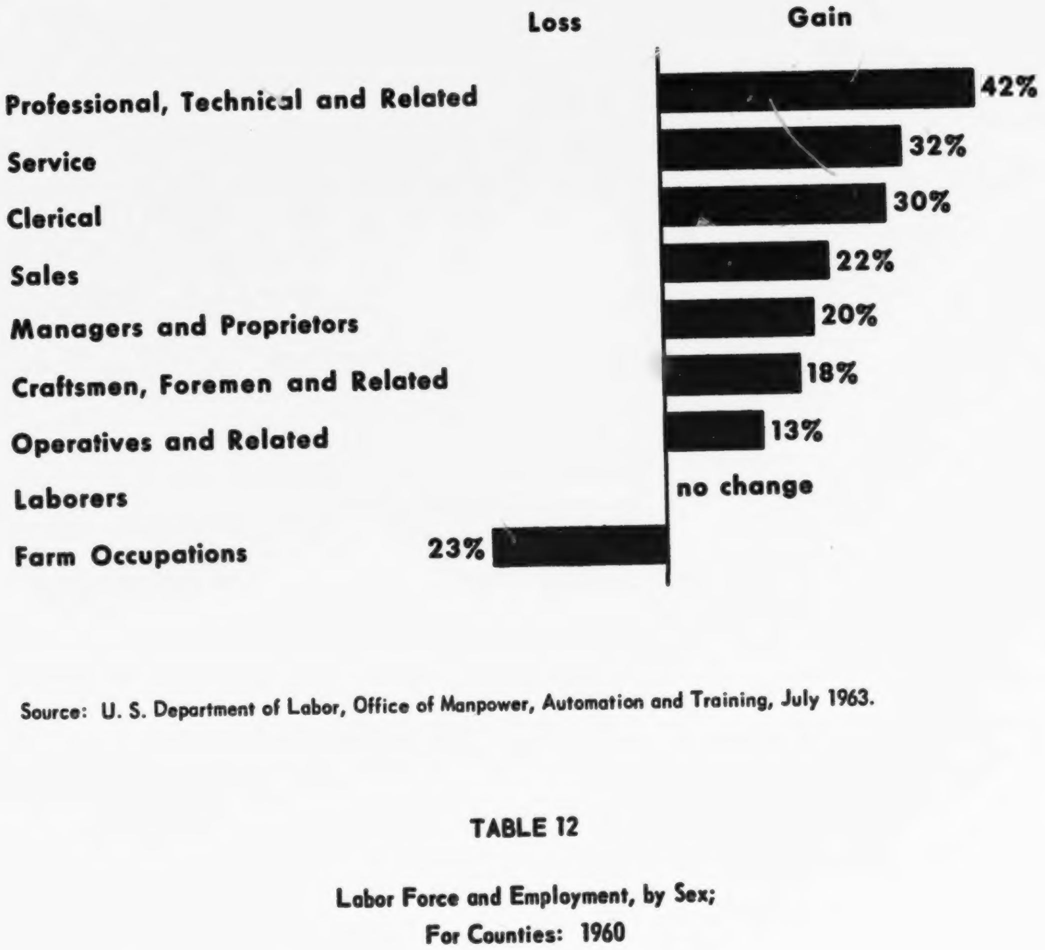
Employers will require at least a high school diploma for more and more jobs. Nevertheless, 7.5 million young people entering the national labor force during the 1960's will not have completed high school.

A Michigan study in 1960 revealed that 62.2% of the unemployed job applicants had failed to finish high school. This compares with 26.7% who were high school graduates and 8.1% who had some college.

Figure 2 summarizes some of the most significant trends in employment:

FIGURE 2

Percent Change In Employment 1960-1970



Source: U. S. Department of Labor, Office of Manpower, Automation and Training, July 1963.

Regional Employment Details

An idea of the size of the labor force, male and female, and the number employed in the region is presented in Table 12.

Employment in the four counties in 1960 totaled 93,015 men and women. Calhoun County comprised 55% of this total.

Approximately 45% of the male employment in the region is in two major occupation groups: a) craftsmen, foremen, and kindred workers, and b) operatives and kindred workers. Table 13 also shows that over one-third of the employed women are in one group--clerical, sales, and kindred workers. These three occupation groups account for over 50% of the total regional employment. It is also significant that each of these three groups have shown a steady growth over the past three census periods.

TABLE 12

Labor Force and Employment, by Sex;
For Counties: 1960

	Civilian Labor Force		Employed Workers	
County	Male	Female	Male	Female
Barry	8,493	3,481	8,061	3,306
Branch	8,473	4,630	8,144	4,394
Calhoun	35,895	18,490	33,778	17,285
Eaton	13,076	5,854	12,541	5,506
Totals	65,937	32,455	62,524	30,491

Source: U. S. Census of Population: 1960.

TABLE 13

Employment by Major Occupation Group, by Sex, for Counties: 1940, 1950, and 1960

Occupation	Barry			Branch			Calhoun			Eaton		
	% distribution			% distribution			% distribution			% distribution		
	1940	1950	1960	1940	1950	1960	1940	1950	1960	1940	1950	1960
Both sexes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional, technical, and kindred workers	6.0	7.5	8.9	5.2	6.7	6.8	7.5	8.3	10.5	6.1	7.0	8.4
Farmers and farm managers	33.1	18.2	9.0	27.1	18.1	8.3	7.7	4.3	2.3	25.1	14.9	7.3
Managers, officials, and prop's, exc. farm	6.6	6.6	5.3	7.8	7.9	7.2	8.0	8.0	7.9	7.0	6.6	6.4
Clerical, sales, and kindred workers	9.2	13.8	16.3	10.0	14.1	15.6	16.5	18.9	20.2	11.1	15.2	20.0
Craftsmen, foremen, and kindred workers	11.5	14.8	15.1	9.5	11.9	12.3	16.6	16.9	15.0	10.7	14.9	16.5
Operatives and kindred workers	11.9	21.6	24.1	16.9	20.5	23.2	19.9	24.1	22.1	16.6	23.6	22.3
Private household workers	3.9	2.2	1.8	3.7	2.2	3.4	3.7	2.0	2.0	3.7	1.8	2.8
Service workers, except private household	3.4	4.3	6.7	4.1	7.4	12.2	8.1	9.6	10.2	3.9	5.2	7.3
Farm laborers and foremen	9.2	5.9	2.7	10.0	5.6	3.0	3.4	1.9	1.1	8.9	4.8	2.2
Laborers, except farm and mine	4.0	3.9	4.9	4.2	3.7	4.2	7.0	5.0	4.1	5.2	4.0	3.7
Occupation not reported	1.1	1.1	5.1	1.4	1.8	3.7	1.7	1.1	4.6	1.8	1.9	3.1
Male	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional, technical, and kindred workers	3.8	5.4	7.2	3.3	4.4	4.7	5.3	6.6	9.3	3.9	5.1	6.8
Farmers and farm managers	39.0	23.1	12.1	33.2	24.1	12.0	10.1	6.1	3.4	30.0	18.9	10.2
Managers, officials, and prop's, exc. farm	7.1	7.5	6.6	8.4	9.2	9.2	9.5	9.7	10.0	7.7	7.4	7.9
Clerical, sales, and kindred workers	5.6	8.5	9.6	7.3	9.0	10.2	12.4	12.2	11.8	7.7	9.4	10.8
Craftsmen, foremen, and kindred workers	13.7	18.8	20.6	11.6	15.6	18.5	21.8	23.5	22.0	12.4	18.7	22.8
Operatives and kindred workers	12.0	22.0	26.0	15.3	20.9	24.6	20.2	24.5	24.6	17.6	25.7	26.4
Private household workers	.2	.1	.2	.1	.1	.2	.2	.1	.1	.1	.0	.1
Service workers, except private household	2.1	2.7	3.0	2.5	4.5	6.8	6.1	7.2	6.8	2.6	3.3	4.2
Farm laborers and foremen	11.0	6.3	3.3	12.3	5.7	4.0	4.4	2.2	1.4	10.6	5.2	2.9
Laborers, except farm and mine	4.7	4.9	6.7	4.9	4.8	6.0	8.5	7.4	6.0	6.1	5.0	4.9
Occupation not reported	.9	.8	4.8	1.1	1.6	3.8	1.5	.6	4.5	1.4	1.3	3.0
Female	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional, technical, and kindred workers	16.8	14.3	12.8	13.5	13.1	10.7	14.0	12.4	12.8	16.5	13.7	12.2
Farmers and farm managers	3.8	1.8	1.6	2.1	1.6	1.5	.6	.2	.2	2.0	1.7	.7
Managers, officials, and prop's, exc. farm	4.2	3.9	2.3	4.8	4.4	3.4	3.5	4.0	3.8	3.6	3.8	3.1
Clerical, sales, and kindred workers	26.6	31.4	32.8	21.2	28.1	25.6	28.5	34.3	36.5	27.1	34.6	41.0
Craftsmen, foremen and kindred workers	1.0	1.7	1.8	1.1	1.6	.9	1.4	1.8	1.1	2.6	2.3	1.9
Operatives and kindred workers	11.9	20.5	19.4	23.7	19.6	20.7	18.9	23.3	17.4	11.9	16.6	12.9
Private household workers	22.2	9.2	5.8	18.4	7.8	9.4	13.9	6.2	5.6	21.0	7.7	9.1
Service workers, except private household	10.1	9.6	15.9	10.8	15.5	22.2	13.7	15.0	16.8	10.2	11.6	14.2
Farm laborers and foremen	.5	4.6	1.2	.3	5.2	1.2	.5	.8	.6	.9	3.5	.6
Laborers, except farm and mine	.6	.9	.5	1.4	.7	.8	2.6	.6	.3	.8	.6	1.0
Occupation not reported	2.2	1.9	5.9	2.6	2.5	3.7	2.3	1.4	4.8	3.4	3.9	3.4

Sources: 1. U.S. Census of Population: 1940.
2. U.S. Census of Population: 1950.
3. U.S. Census of Population: 1960.

Table 14 gives us a view of employment within each county as it is sub-divided into industry groups. An idea of the relative importance of each type of employment can be gained by studying this table. We find that over one-third (35.40%) of the total employment in the region is provided by manufacturing. Trade (wholesale and retail) accounts for 16.82%. Together these two categories comprise over 52% of the employment. A sharp contrast is provided by agriculture which now accounts for only 7% of the regional employment.

Additional insight is gained by using the broad industry categories presented earlier in this chapter. Table 14 presents evidence to show that production industries--the first four categories in the table--provide 47.36% of the regional employment. Service industries, then, account for over one-half the employment.

Information has been presented for regional employment, employment by major occupational groups, and employment by industry groups. Detailed insight into employment by individual occupation is provided by the findings of the Skilled Manpower Survey conducted in the region during the summer of 1965. Volunteers in each school district prepared a card file of employers. Every enterprise with one employee or more was listed. Each employer was invited to an evening informational program in a nearby school. Questionnaires were then mailed to each employer. Follow-up contact was made by a combination of personal calls and additional mailings.

In the three counties (plus the portion of Eaton) a total of 4,279 employers of an estimated 78,576 workers were contacted. Of this total, 2,668 employers (62%) responded. Most of the small employers indicated by note or verbally that they operated a small business venture with no plans for expansion. They felt the survey did not concern them and chose, therefore, not to participate. All major employers participated. The 1,611 active participants in the survey represented 32,199 employees--41% of the employment estimated for the three counties plus the portion of Eaton. Table 15 gives further information.

TABLE 14

Employment By Major Industry Group, By County: 1960

Industry Group	County Barry	 Branch	 Calhoun	 Eaton	 Total
I. Production Industries					
Agriculture, forestry & fisheries. . .	1,389	1,484	1,868	1,759	6,500 (6.99)
Mining (sand, gravel, oil, etc.). . . .	27	12	146	52	237 (.25)
Construction	623	539	2,130	1,104	4,396 (4.72)
Manufacturing.	4,531	3,704	18,591	6,064	32,890 (35.40)
II. Service Industries					
Utilities[1]	432	569	2,811	877	4,689 (5.04)
Trade[2]	1,575	2,505	8,519	3,033	15,632 (16.82)
Finance, Insurance & Real Estate .	258	231	2,150	549	3,188 (3.43)
Business, Repair & Personal Services	633	932	3,567	1,178	6,310 (6.79)
Other Services[3]	1,259	1,789	7,055	2,296	12,399 (13.33)
Public Administration	247	387	2,457	755	3,846 (4.14)
Not reported	393	386	1,769	380	2,928 (3.15)
Total County Employment.	11,367	12,538	51,063	18,047	93,015 (100.06)

Note: Number in parentheses indicates percentages of total regional employment in each industry group. Total slightly exceeds 100% due to rounding of each group to two places.

[1] Includes transportation, communication and other utilities.

[2] Includes wholesale and retail trade.

[3] Includes medical and health services, education services, other professional and related services.

Source: U. S. Census of Population: 1960.

TABLE 15

Participation in Skilled Manpower Survey:
Summer, 1965

Industry Group	Employers Contacted	Active Participants	% Participating
Manufacturing	222	106	47.7
Trade[1]	1,795	583	32.5
Service[2]	2,262	922	40.7
Total	4,279	1,611	37.7

[1] Includes wholesale and retail trade.

[2] Includes all forms of services and other non-manufacturing.

Source: Skilled Manpower Survey: 1965

The Skilled Manpower Survey questionnaire was divided into ten categories such as "Clerical Occupations." A total of 182 individual occupations were listed in numerical sequence within the ten categories. (The data in the remainder of this chapter show numerical sequence numbers and occupational titles as they appeared on the questionnaire.) Since the survey was concerned with education for employment-bound youth --those who likely would not be college graduates--occupations generally requiring a Bachelor's degree or more were not listed. Space was provided in each category for writing in occupations that may have been neglected. The questionnaire format is shown in the appendix of this report.

The results of this survey comprise the balance of this chapter. Table 16 is a succinct presentation of major findings. It both summarizes and introduces the reader to the detailed information which follows. Occupations having significant expansion and replacement needs are listed in the table in order of magnitude. Each of these "demand" occupations is noted if it is also considered by employers to be "hard to fill." Another notation is made if employers are interested in additional training for their present employees.

Fifty-three "demand" occupations are listed in Table 16. Forty-five (85%) are from three major occupation groups. Twenty-one occupations (40%) belong to clerical, sales and kindred workers. Thirteen occupations (24%) may be grouped as service workers. Eleven (21%) are from the craftsmen, foremen, and kindred workers grouping.

Information has been presented (Table 13) showing that over one-third of all female and 10% of all male workers in the region are employed in one major occupation group-clerical, sales and kindred workers. The Skilled Manpower Survey yields additional details. The occupation of "retail salesperson," for example, is in acute demand, employers consider it a hard to fill job, and are interested in additional training for retail salespersons now working. The evidence is strong that a training program(s) to prepare and up-grade these workers is needed. This is only one example of many training program suggestions that may be gained from a careful study of Table 16 and subsequent information.

Present employment together with projected needs in each of the individual occupations is shown in Table 17. The figures presented are the result of statistical projections from the participating employers to yield trends for the complete group. The formulae used for this projection is presented in the appendix. Projected needs are classified into expansion and replacement demands in three industry groupings: manufacturing, trade, and service. This detailed method of reporting the data may be helpful in planning the direction of certain training programs.

Data such as that found in Tables 16 and 17 should be used with care. The results should be interpreted in light of the survey technique, the groups participating, trends in the labor market, similar occupations, etc. A few examples will suffice to illustrate the need for careful interpretation:

1) Occupation 114, business machine serviceman, is reported as low in employment with virtually no projected need. National trends do not agree. Analysis reveals that many large offices in the area have service contracts with companies like IBM. These companies have their offices in cities outside the region covered by this survey.
2) Occupation 033, barbers, seems far too low in total employment and projected needs. Barbers are largely self-employed. It was mentioned earlier that small employers generally had few plans for expansion, felt the survey did not concern them, and most chose not to participate. A small sample, of course, decreases the validity of the projection.
3) The shortage of tailors has been pointed out in national studies. Are female seamstresses doing some of the alterations, etc. formerly done by male tailors? Should these two occupations (056 and 059) be combined and studied further.
4) The employment and projected need for assemblers (occupation 073) is high, yet a formal training program is not necessary.
5) Farmers were not surveyed and farm occupations are not reported. Census studies, however, reveal such employment in the region is steadily declining and now represents less than 10% of total employment.
6) The number of bus drivers, occupation 161, seems much too high until one recognizes that this includes school bus drivers, usually a part-time job.
7) The number of chemical technicians (occupation 075) per se, is low. A survey two years ago by Kellogg Community College, however, revealed that graduates of such a training program are also employed as metallurgical technicians (occupation 092) and quality control technicians (occupation 100).
8) The large numbers reported in "other occupations" at the end of each list may include professionals, proprietors, etc. that this survey was not intended to cover. It may also involve the reporting of job titles synonymous to those provided.

TABLE 16

Expansion & Replacement

Needs by Magnitude: Summer, 1965

Occupation	Five Year Need
083 Foreman	1704 * †
024 Retail Salesperson	1068 * †
008 General office worker	1028
006 Clerk-typist	898
089 Machine operator	773
060 Waiter/waitress	666
057 Service station attendant	618
014 Secretary	558 * †
073 Assembler	528
112 Automobile mechanic	504 * †
069 Nurse's aide	417 †
017 Stockboy	381
003 Bookkeeper	372 *
016 Stenographer	352
004 Cashier	347
085 Inspector	339
068 Nurse (registered)	315 *
136 Laborer	314
046 Janitor	289
170 Truck Driver (local)	287
039 Cook or chef	284 * †
026 Route salesman	280 *
022 Insurance agent or broker	271 *
067 Nurse (practical)	261 * †
040 Dishwasher	256
023 Manufacturer's sales representative	252 *
091 Machinist, all-round	236 * †
025 Real estate salesman or broker	216 * †
001 Accountant	214 *
048 Laundry & dry cleaning worker	208
047 Kitchen helper	204
007 Electronic data processing operator	203 * †
106 Welder and flame cutter	198 * †
129 Carpenter	196 * †
161 Bus driver	185 †
120 Millwright	171 * †
028 Wholesale salesman	169 * †
010 Office machine operator	166 * †
042 Fireman	152 *
052 Policeman	140 * †
011 Office manager	136 *
093 Molder	136 *
012 Postal clerk	134
104 Tool maker	132 * †
119 Maintenance electrician	127 * †
080 Draftsman	125 * †
140 Plumber and pipefitter	123 * †
171 Truck driver (over-the-road)	122
096 Power truck operator	118
027 Sales manager	114 *
015 Shipping and receiving clerk	112
013 Receptionist	110
049 Mail carrier	106

* Employers consider this a "hard to fill" job. See Table 18.

† Employers are interested in additional training for present workers. See Table 19.

TABLE 17

Regional Employment and Projections for Next Five Years: Summer, 1965

Occupation	Estimated Employment	Projected Needs	Mfg. Expsn	Mfg. Rplmt	Trade Expsn	Trade Rplmt	Service Expsn	Service Rplmt
Clerical Occupations								
001 Accountant	486	214	34	19	18	16	68	59
002 Bank clerk	88	36					18	18
003 Bookkeeper	895	372	21	25	68	81	59	118
004 Cashier	470	347			81	151	34	81
005 Claim adjuster	140	57					16	41
006 Clerk-typist	1722	898	69	86	41	16	143	543
007 Electronic Data processing operator	432	203	23	17	5	4	23	131
008 General office worker	2291	1028	63	121	59	81	143	561
009 Hotel/motel room clerk	23	50						50
010 Office machine operator	318	166	2	17	9	13	39	86
011 Office manager	503	136	2	2	5	18	34	75
012 Postal clerk	394	134		10			18	106
013 Receptionist	199	110	6	10	4	18	18	54
014 Secretary	1266	558	32	63	31	16	122	294
015 Shipping and receiving clerk	252	112	12	15	27	31	9	18
016 Stenographer	543	352	25	38	13	13	57	206
017 Stockboy	397	381			135	237	2	7
018 Teller	363	92		2			36	54
019 Other clerical occupations	1519	587	6	6	41	111	100	323
Sales Occupations								
020 Buyer	320	87	17	8	38	22	2	
021 Consultant	15	5					5	
022 Insurance agent or broker	387	271					156	115
023 Manufacturer's sales representative	299	252	21	10	189		27	5
024 Retail salesperson	2668	1068			469	544	30	25
025 Real estate salesman or broker	176	216					106	110
026 Route salesman	307	280	6	8	123	138	5	
027 Sales manager	380	114	15	15	25	49	5	5
028 Wholesale salesman	412	169	23	65	70	9	2	
029 Other sales occupations	407	149	12	8	34	25	39	31
Service Occupations								
030 Baker	81	33			9	22		2
031 Bakery helper	61	41			16	25		
032 Bakery icer	5	5				5		
033 Barber	72	42			4	4	9	25
034 Bartender	109	27			13	5	2	7
035 Beautician	149	98					23	75
036 Bellboy								
037 Busboy	23	22		6	16			
038 Cafeteria counter attendant	116	76		4	15	4	7	36
039 Cook or chef	608	284		2	104	49	32	97
040 Dishwasher	177	256			25	104	52	75
041 Dressmaker	5							
042 Fireman	398	152					5	147
043 Florist	38	32			16	16		
044 Gardener	32	27					7	20

TABLE 17 Continued

Occupation	Estimated Employment	Projected Needs	Mfg. Expsn	Mfg. Rplmt	Trade Expsn	Trade Rplmt	Service Expsn	Service Rplmt
045 Hotel/motel housekeeper	235	68					11	57
046 Janitor	985	289	10	21		22	61	175
047 Kitchen helper	884	204		2	31	4	27	140
048 Laundry & dry cleaning worker	465	208		2			54	152
049 Mail carrier	348	106		2			27	77
050 Meatcutter	117	93	6		47	38		2
051 Plant security guard	125	55		21			9	25
052 Policeman	240	140					2	138
053 Radio and TV announcer	23	9						9
054 Radio and TV station engineer	16	2					2	
055 Restaurant manager	52	72			59	13		
056 Seamstress	76	16			4		5	7
057 Service station attendant	639	618			190	397	2	29
058 Stationary engineer	151	22					11	11
059 Tailor	21	10			4	4	2	
060 Waiter/waitress	465	666			135	384		147
061 Other service occupations	937	730	6	2	359	160	79	124
Health Care Occupations								
062 Dental office assistant	131	93					23	70
063 Dental hygienist	29	34					11	23
064 Dietitian	34	12					5	7
065 Medical office assistant	158	64					25	39
066 Medical lab technician	61	21					5	16
067 Nurse (practical)	477	261					30	231
068 Nurse (registered)	809	315	6	10			84	215
069 Nurse's aide	2910	417					107	310
070 Orderly	57	36					9	27
071 X-ray technician	41	18					9	9
072 Other health care occupations	1267	1337			9	9	48	1271
Manufacturing Occupations								
073 Assembler	1827	528	249	279				
074 Beater operator								
075 Chemical technician	8	8	4	4				
076 Coremaker	255	63	38	25				
077 Corrugator operator	23	2	2					
078 Die maker	111	77	50	27				
079 Digester operator								
080 Draftsman	307	125	54	67	4			
081 Drafting & design technician	170	50	29	21				
082 Electroplater	173	98	50	46			2	
083 Foreman	1249	1704	1562	128	5		9	
084 Forge operator	138	8		8				
085 Inspector	1618	339	220	119				
086 Instrument maker								
087 Instrumentation technician	21	8	6	2				
088 Layout man	98	38	25	13				
089 Machine operator	4972	773	159	580	9	25		
090 Machine tool operator	907	93	61	21			11	
091 Machinist, all-round	485	236	140	78		18		
092 Metallurgical technician	61	27	21	6				

TABLE 17 Continued

Occupation	Estimated Employment	Projected Needs	Mfg. Expsn	Mfg. Rplmt	Trade Expsn	Trade Rplmt	Service Expsn	Service Rplmt
093 Molder	331	136	126	10				
094 Paper machine operator	641	17		17				
095 Patternmaker	82	69	52	17				
096 Power truck operator	658	118	57	59		2		
097 Printer-slotter operator	4	4	4					
098 Production control technician	84	44	21	23				
099 Production painter	128	49	15	34				
100 Quality control technician	130	82	46	36				
101 Setup man	281	67	25	40			2	
102 Stationary fireman (boiler)	58	4		4				
103 Time study technician	87	46	19	23			2	2
104 Tool maker	216	132	86	46				
105 Tool room attendant	96	19	13	6				
106 Welder and flame cutter	574	198	140	29	16	13		
107 Other manufacturing occupations	4428	868	524	82	25	13	2	5
108 Other manufacturing occupations			80	128		9		
			604	210		22		
Mechanics & Repairmen Occupations								
109 Air-conditioning, refrigeration and/or heating mechanic	67	58	4	4	16	13	12	9
110 Air-conditioning, refrigeration and/or heating technician	37	37	2	4	13	5	11	2
111 Appliance repairman	125	55			18	5	25	7
112 Automobile mechanic	660	504	4	6	219	189	50	36
113 Aviation mechanic	16	9					7	2
114 Business machine serviceman	11	2						2
115 Diesel mechanic	13	7					7	
116 Electronic technician	46	21	6	2		4		9
117 Industrial machinery repairman	445	94	46	38	4	4	2	
118 Instrument repairman	44	2		2				
119 Maintenance electrician	226	127	52	46	13		5	11
120 Millwright	561	171	65	98	4	4		
121 Shoe repairman	11							
122 Television and radio repairman	45	36			25	9	2	
123 Watch repairman	11	7			5		2	
124 Jeweler and jewelry repairman		4			4			
125 Other mechanics & repairmen occupations	582	366	34	17	104	49	81	81
Building Trades Occupations								
126 Architectural draftsman	47	17	2	2			2	11
127 Bricklayer and mason	134	78					67	11
128 Cabinet maker	40	28	4	6			16	2
129 Carpenter	334	196	2	6	31	14	111	32
130 Civil and highway technician surveyor	50	32					5	27
131 Electrician	220	61		4	18	5	27	7
132 Floor covering installer	88	63			27	9	18	9
133 Glazier	16	7					5	2
134 Heavy equipment operator	210	93					54	39
135 Ironworker	29							
136 Laborer	938	314	33	54			93	134
137 Painter	238	76	2	8			34	32
138 Paperhanger	5	4					2	2

TABLE 17 Continued

Occupation	Estimated Employment	Projected Needs	Mfg. Expsn	Mfg. Rplmt	Trade Expsn	Trade Rplmt	Service Expsn	Service Rplmt
139 Plasterer	16	2					2	
140 Plumber and pipefitter	287	123	8	10			66	39
141 Roofer and sider	167	51	8		5		20	18
142 Sheet metal worker	195	31	13	6	5		7	
143 Supervisor	232	64	10	29			18	7
144 Tile setter	13	5					5	
145 Other building trades occupations	386	130	6	17			23	84
Graphic Arts & Printing Occupations								
146 All-round printer	41	35	4	8	4		7	12
147 Bookbinder	16	5						5
148 Commercial artist	36	42	4				29	9
149 Compositor	43	9					2	7
150 Electrotyper								3
151 Linotype operator	29	7						7
152 Lithographic cameraman	7	5					5	
153 Monotype operator								
154 Phototypesetting operator	7	10					5	5
155 Photoengraver								
156 Pressman	213	18	4	10			2	2
157 Sterotyper	9	7					2	5
158 Other graphic arts & printing occupations occupations	133	74	17	10			20	27
Transportation Occupations								
159 Ambulance driver	29	9						9
160 Brakeman								
161 Bus driver	455	185					79	106
162 Conductor								
163 Dispatcher	38	5						5
164 Locomotive engineer								
165 Locomotive fireman								
166 Signal department worker								
167 Station agent	2	5						5
168 Taxi driver	95	50						50
169 Tracks worker								
170 Truck driver (local)	521	287	19	19	83	117	20	29
171 Truck driver (over-the-road)	344	122	23	17	49	22	11	
172 Other transportation occupations	309	113				22	57	34
Utilities Occupations								
173 Electrical technician	38	4	2					2
174 Installer and repairman (telephone)	39	11					9	2
175 Installer and repairman (meter)	39	5					5	
176 Lineman and cable splicer	154	10					5	5
177 Meter reader	86	25					7	18
178 Power plant operator	54	7						7
179 Substation operator	9							
180 Telephone operator	128	26	4	6			7	9
181 Water department or sanitation worker	20	2						2
182 Other utilities occupations	320	52		2	9		32	9

Source: Skilled Manpower Survey: 1965.

Employer opinion whether a job is "hard to fill" and must often be recruited from outside the area may be incentive for establishing a training program. Table 18 gives information for those occupations that employers consider "hard to fill."

Another large group to be considered when establishing programs is employed adults seeking additional training for updating and advancement. Table 19 presents information for those occupations in which a majority of participating employers indicated an interest in additional training for their employees.

TABLE 18

Occupations Considered "Hard to Fill": Summer, 1965

Occupation	"Hard to fill?" Yes	No	Total	Recruitment Sources Upgrading	Area	Out-of-Area
Clerical Occupations						
001 Accountant	57	29	86	22	47	23
003 Bookkeeper	105	98	203	56	141	9
005 Claim adjuster	10	3	13	1	11	4
007 Electronic data processing operator	13	9	22	12	19	5
010 Office machine operator	18	16	34	12	30	1
011 Office manager	74	21	95	42	51	11
014 Secretary	87	63	150	37	120	7
Sales Occupations						
020 Buyer	48	16	64	37	26	8
022 Insurance agent or broker	25	5	30	6	21	4
023 Manufacturer's sales representative	14	11	25	5	10	12
024 Retail salesperson	87	84	171	59	94	6
025 Real estate salesman or broker	13	2	15		8	
026 Route salesman	16	8	24	7	14	5
027 Sales manager	68	11	79	40	25	16
028 Wholesale salesman	20	3	23	9	13	5
Services Occupations						
030 Baker	10	2	12	6	3	2
031 Bakery helper	3	2	5	3	2	
035 Beautician	17	4	21	3	11	4
039 Cook or chef	31	19	50	15	30	2
042 Fireman	4	3	7	6	4	
045 Hotel/motel housekeeper	7	3	10	1	8	1
050 Meatcutter	12	6	18	9	6	2
052 Policeman	2	3	5	2	5	1
055 Restaurant manager	7	4	11	5	5	
059 Tailor	2		2		2	
Health Care Occupations						
062 Dental office assistant	24	13	37	4	25	2
063 Dental hygienist	18	0	18		5	12
064 Dietitian	4	2	6		5	3
065 Medical office assistant	29	17	46	3	26	3
066 Medical lab technician	11	0	11		6	5
067 Nurse (practical)	15	5	20		18	3
068 Nurse (registered)	40	9	49	2	45	8
070 Orderly	3	1	4		4	
Manufacturing Occupations						
075 Chemical technician	3	1	4	2	4	
078 Die maker	14	1	15	9	7	7
080 Draftsman	16	9	25	6	21	10
081 Drafting & design technician	11	2	13	4	8	4
083 Foreman	42	14	56	44	21	13

TABLE 18 Continued

	Occupation	"Hard to fill?" Yes	No	Total	Recruitment Sources Upgrading	Area	Out-of-Area
087	Instrumentation technician	2	1	3	1	1	1
088	Layout man	9	4	13	10	9	5
090	Machine tool operator	6	4	10	8	6	4
091	Machinist, all-round	22	4	26	14	18	7
092	Metallurgical technician	9	1	10	5	7	3
093	Molder	4	3	7	6	3	1
100	Quality control technician	9	6	15	10	9	3
101	Setup man	12	7	19	15	8	3
102	Stationery fireman (boiler)	7	5	12	7	10	3
103	Time study technician	10	3	13	7	10	4
104	Tool maker	15	1	16	9	9	5
106	Welder and flame cutter	16	13	29	22	14	4
	Mechanics & Repairmen Occupations						
109	Air-conditioning, refrigeration and/or heating mechanic	13	3	16	8	9	1
110	Air-conditioning, refrigeration and/or heating technician	5	4	9	2	7	2
111	Appliance repairman	13	5	18	5	14	1
112	Automobile mechanic	70	11	81	30	42	6
113	Aviation mechanic	3		3		3	3
115	Diesel mechanic	5		5	2	5	2
116	Electronic technician	8		8	2	5	3
117	Industrial machinery repairman	15	4	19	11	10	5
119	Maintenance electrician	24	5	29	17	19	5
120	Millwright	10	4	14	13	8	3
122	Television and radio repairman	12		12	4	6	
123	Watch repairman	4		4			3
	Building Trades Occupations						
126	Architectural draftsman	3	1	4	2	3	3
127	Bricklayer and mason	9	4	13	6	7	1
128	Cabinet maker	4	2	6	1	3	1
129	Carpenter	20	10	30	10	13	2
130	Civil and highway technician surveyor	4		4	2	2	4
131	Electrician	9	5	14	2	9	
132	Floor covering installer	10		10	1		2
140	Plumber and pipefitter	15	5	20	11	14	4
141	Roofer and sider	5	1	6	2	1	
143	Supervisor	13	6	19	16	10	6
	Graphic Arts & Printing Occupations						
146	All-round printer	8	1	9	5	3	
148	Commercial artist	7		7	2	3	3
150	Electrotyper	6	1	7	4	3	1
151	Linotype operator	4	3	7	3	4	1
152	Lithographic cameraman	2		2	1		
154	Phototypesetting operator	2		2		1	
156	Pressman	6	3	9	5	1	2
	Utilities Occupations						
173	Electrical technician	3	1	4	1	4	1
174	Installer and repairman (telephone)	2		2	1	1	2
176	Lineman and cable splicer	3	1	4	3		2
178	Power plant operator	2		2		2	

Source: Skilled Manpower Survey: 1965.

TABLE 19

Interest in Additional Occupational Training:

Summer, 1965

Occupation	Would you be interested in additional training for these workers in an area school?	
	Yes	No
Clerical Occupations		
005 Claim adjuster	5	4
007 Electronic data processing operator	12	9
010 Office machine operator	13	13
014 Secretary	76	63
018 Teller	6	4
Sales Occupations		
024 Retail salesperson	81	75
025 Real estate salesman or broker	7	6
028 Wholesale salesman	12	8
Services Occupations		
030 Baker	6	5
031 Bakery helper	3	3
035 Beautician	11	10
039 Cook or chef	27	16
044 Gardener	3	3
050 Meatcutter	10	7
052 Policeman	5	1
055 Restaurant manager	7	4
059 Tailor	2	0
Health Care Occupations		
062 Dental office assistant	24	18
063 Dental hygienist	8	6
064 Dietitian	4	3
066 Medical lab technician	7	5
067 Nurse (practical)	12	6
069 Nurse's aide	7	6
070 Orderly	4	1
Manufacturing Occupations		
075 Chemical technician	3	0
076 Coremaker	3	3
078 Die maker	9	4
080 Draftsman	17	6
081 Drafting & design technician	10	2
082 Electroplater	4	3
083 Foreman	26	22
087 Instrumentation technician	1	0
088 Layout man	8	4
090 Machine tool operator	8	3
091 Machinist, all-round	15	6
092 Metallurgical technician	6	2
095 Patternmaker	6	2
100 Quality control technician	7	4
102 Stationery fireman (boiler)	5	4
103 Time study technician	7	4
104 Tool maker	10	5
106 Welder and flame cutter	15	7

TABLE 19 Continued

Occupation	Would you be interested in additional training for these workers in an area school? Yes	No
Mechanics & Repairmen Occupations		
109 Air-conditioning, refrigeration and/or heating mechanic	12	4
110 Air-conditioning, refrigeration and/or heating technician	5	2
111 Appliance repairman	11	7
112 Automobile mechanic	61	17
113 Aviation mechanic	2	1
117 Industrial machinery repairman	14	4
119 Maintenance electrician	22	6
120 Millwright	13	2
122 Television and radio repairman	8	2
Building Trades Occupations		
126 Architectural draftsman	3	1
128 Cabinet maker	5	0
129 Carpenter	11	10
130 Civil and highway technician surveyor	3	0
131 Electrician	10	3
132 Floor covering installer	4	3
135 Ironworker	3	0
137 Painter	10	6
140 Plumber and pipefitter	10	7
143 Supervisor	9	7
Graphic Arts & Printing Occupations		
146 All-round printer	8	1
148 Commercial artist	3	3
150 Electrotyper	5	2
151 Linotype operator	4	3
156 Pressman	5	4
Transportation Occupations		
159 Ambulance driver	2	0
161 Bus driver	4	4
Utilities Occupations		
173 Electrical technician	4	1
174 Installer and repairman (telephone)	2	0
176 Lineman and cable splicer	2	2
178 Power plant operator	1	0

Source: Skilled Manpower Survey: 1965.

Summary

The national labor force will increase nearly 20% during the 1960's. Workers under age 25 will account for 46% of this growth. One out of three workers will be a woman. The labor force is highly mobile--7% of all male workers are now living in a county different from the one in which they lived a year before.

The number of employees in service industries now out-numbers those in production industries. By 1970, production type employment will increase 17% but service type employment will rise 30%.

Approximately 45% of the male employment in the region is in two major occupation groups: a) craftsmen, foremen, and kindred workers, and b) operatives and kindred workers. Over one-third of the employed women are in one group--clerical, sales, and kindred workers. These three occupation groups account for over 50% of the total regional employment. Each of these three groups have shown a steady growth since 1940.

Details about 182 individual occupations are provided by the Skilled Manpower Survey conducted in the region during the summer of 1965. Sixty-two per cent of the employers responded with 38% becoming active participants. The 1,611 participants (including all major employers) represented 32,199 employees--41% of the employment in the three counties plus the portion of Eaton.

Fifty-three occupations were found to have significant expansion and replacement needs. Each of these "demand" occupations was noted if it is also considered by employers to be "hard to fill." Another notation was made if employers are interested in additional training for their present employees. Further information is provided in a series of tables.

Of the fifty-three "demand" occupations, forty-five (85%) are from three major occupation groups. Twenty-one occupations (40%) belong to clerical, sales and kindred workers. Thirteen occupations (24%) may be grouped as service workers. Eleven (21%) are from the craftsmen, foremen, and kindred workers grouping.

5

School Administrators Voice Concern

Sub-Committee II of the Committee of 100 was charged with reviewing vocational programs in operation in the region. Their study led to the observation that 70% of high school graduates *do not* continue into a four-year college program.

In light of this statistic, how did the school administrators view the adequacy of their offerings for that majority who were employment-bound rather than college-bound? Nineteen administrators responded to a series of questions.

1. "Do you consider your subject offerings and program for vocational education...inadequate, adequate, more than adequate?"

   16 said inadequate
   3 said adequate

2. "Do you consider your equipment for vocational education inadequate, adequate, more than adequate?"

   14 said inadequate
   5 said adequate

3. "Do you consider your facilities for vocational education inadequate, adequate, more than adequate?"

   13 said inadequate
   6 said adequate

4. "Does your school system, in your opinion, have a budget for vocational education that is inadequate, adequate, more than adequate?"

   15 said inadequate
   4 said adequate

5. "Do you feel your vocational education program can be made adequate by re-apportioning your current budget?"

   13 said no
   2 said yes
   4 did not respond

Sixteen of the nineteen administrators felt that some vocational education should be provided in high school with more available in an area center or in a community college.

Three administrators felt that only general and fundamental education should be provided in the high school. Two of the three felt that trade and vocational training should be made available in an area center, the third favored this training in an established community college.

Summary

Seventy per cent of high school graduates do not continue into a four year college program. How adequate, then, are school offerings for that majority who are employment-bound rather than college-bound? Nineteen school administrators replied.

Their views:

84% felt their subject offerings in vocational education were inadequate.

79% felt their budget for vocational education was inadequate.

74% considered their equipment for vocational education to be inadequate.

68% considered their facilities for vocational education to be inadequate.

Sixteen of the nineteen administrators felt that some vocational education should be provided in the high school with more available in an area center or in a community college.

6

Reviewing The Schools

As mentioned earlier the recommendations of the Committee of 100 implied the bringing together of students with special training needs in some efficient working arrangement between schools and intermediate districts.

Chapter 6 attempts to assess the job that has been done in meeting the educational needs of our youth prior to this time. Have we succeeded in holding our youth in school? How many have completed education beyond high school? What types of vocational training are available to those who are not college-bound? How many are enrolled? How many are being trained in facilities deemed poor? adequate? superior? Are the present vocational-practical arts faculty qualified to serve the specialty training needs of today's job market?

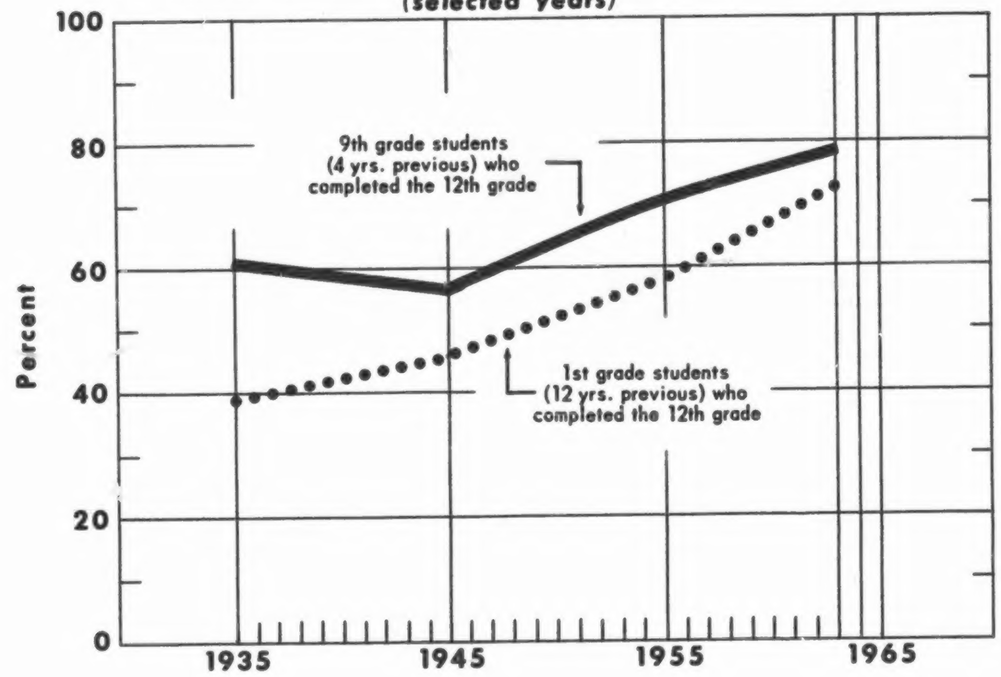
In Michigan in 1963 only seven youths out of ten were completing twelve years of schooling. Figure 3 shows the trends since 1935.

A study of persons 25 years of age and over reveals that approximately one-third of the group in each county completed eight grades or less. Approximately one-sixth continued their education beyond high school. The median years of school completed varies only slightly from the state average. Table 20 presents further details.

Table 21 reveals that regional enrollment in grades 9 – 12 totaled 16,630 youths during a recent school year. The majority of this group are not college-bound and could benefit from improved pre-employment training.

FIGURE 3

Completion Ratios In Michigan Schools
(selected years)



Source: Michigan Department of Public Instruction, Special Release.

TABLE 20

Years Of School Completed By Persons 25 Years Old And Over, By County: 1960

Years	Barry	Branch	Calhoun	Eaton	State
1 to 8	6,161	6,927	23,876	8,379	
9 to 11	3,775	3,726	18,012	5,741	
12	4,996	5,001	21,119	7,933	
13 to 15	1,286	1,382	6,640	2,074	
16 or more	825	736	5,159	1,529	
Median school years completed	10.9	10.2	11.2	11.3	10.8

Source: U.S. Census of Population: 1960.

TABLE 21

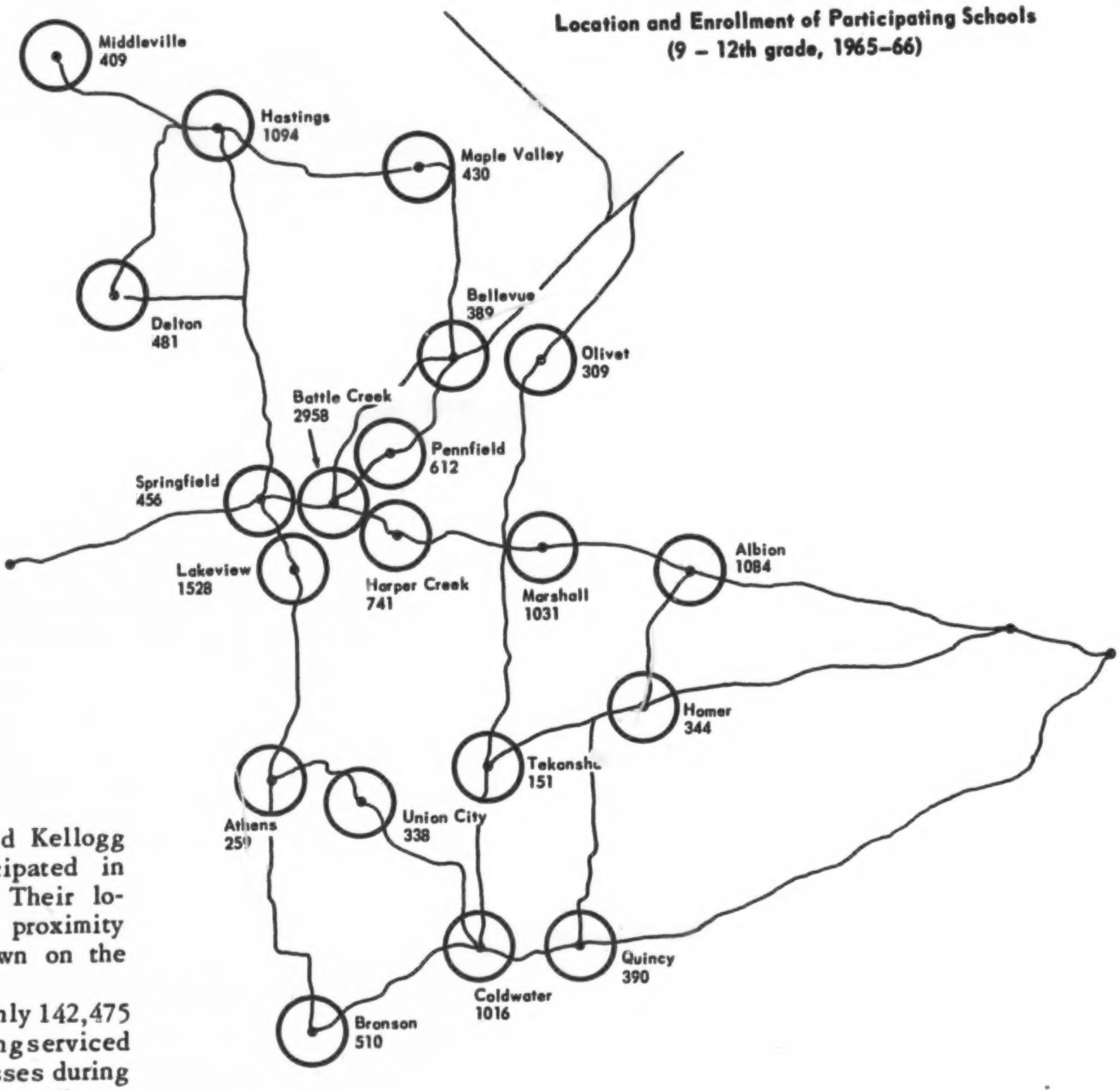
Enrollment By Intermediate District: 1963

Grades	Barry	Branch	Calhoun	Eaton	Total
K – 6	3,862	4,520	19,262	8,322	35,966
7 – 8	988	1,173	4,904	2,174	9,239
9 – 12	1,860	2,196	8,721	3,863	16,630
Total	6,710	7,879	32,887	14,359	61,835

Source: Official Count 9-27-63 as reported by Intermediate Districts.

FIGURE 4

Location and Enrollment of Participating Schools
(9 – 12th grade, 1965–66)


Middleville
409
Hastings
1094
Maple Valley
430
Delton
481
Bellevue
389
Olivet
309
Battle Creek
2958
Pennfield
612
Springfield
456
Lakeview
1528
Harper Creek
741
Marshall
1031
Albion
1084
Homer
344
Tekonsha
151
Athens
259
Union City
338
Coldwater
1016
Quincy
390
Bronson
510

Twenty high schools and Kellogg Community College participated in this subsequent survey. Their locations, enrollments, and proximity to major highways is shown on the map.

Despite steady growth, only 142,475 Michigan students were being serviced by approved vocational classes during 1962. Table 22 details the enrollment by programs.

Seventeen of the twenty high schools participating in this subsequent study furnished information on types of vocational and practical arts courses offered, enrollments and facilities. One furnished partial information. Two schools (each enrolling less than 300 students) did not respond.

Among the seventeen schools providing complete information, all offered one or more courses in the curriculum areas of trade and industry, business education, and home economics. Ten schools have one or more courses in vocational agriculture. In addition, ten schools reported a total of 257 students enrolled in cooperative education.

Eighteen schools indicated they offer a guidance program. However, thirteen of these offer no job placement service and ten do not practice a periodic follow-up of graduates. Among the eighteen schools, only six offer courses in Adult Education.

Tables 23, 24, and 25 detail the subject offerings currently available

TABLE 22

Enrollment In Vocational Classes In Michigan: Selected Years 1946 – 1962

Fiscal Year	All Programs	Home Economics	Trades & Industry	Agriculture	Distributive Occupations	Practical Nursing[1]	Area Programs[2]
1946	83,156	37,878	28,778	11,577	4,923		
1950	113,865	47,471	37,842	16,265	12,287		
1955	126,172	54,835	36,205	17,913	17,219		
1960	134,849	56,703	40,954	17,327	14,763	629	4,473
1962	142,475	60,873	40,948	16,765	16,581	1,614	5,694

[1] Program began in 1957

[2] Program began in 1959 to meet national defense needs for highly skilled technicians.

Source: U.S. Office of Education, Digest of Annual Reports of State Boards for Vocational Education.

and regional enrollments in each. In addition, participating school personnel were asked to evaluate their facilities and indicate whether they deemed them to be poor, adequate, or superior. The tables then distribute the total enrollment according to facility rating. It should be noted that facilities, as used here, refers to both rooms and equipment. It is important, too, for the user of these tables to be aware that the total enrollment figures can be mis-leading. In many instances, a student may be taking two or more courses simultaneously. Likewise, a large school may have two rooms for typing, for example, one of which is deemed adequate, the other poor.

As we have seen in Chapter 5, sixteen of nineteen school administrators considered their subject offerings and program for vocational education to be inadequate. A study of Table 23 shows that emphasis in the trade and industry area is now placed upon courses in general shop, wood shop, machine shop, and drafting. Employers have indicated a large employment demand for all-around machinists, machine operators, and draftsmen. General shop and wood shop have an avocational rather than vocational objective.

In view of employment trends, it seems that more emphasis could be placed upon metals shop instruction, particularly in welding and foundry techniques. A great shortage of auto mechanics and service station attendants is indicated by employers, yet few schools are offering course work in this area. Further study should be given to coordinating several subjects to provide pre-employment preparation for such demand occupations as millwrights. Possibilities of pre-apprenticeship courses for carpenters, electricians, masons, and plumbers should be studied. Electronics employment possibilities in this region, on the other hand, are limited; the expense of offering courses beyond a general introductory level should be weighed carefully.

What about subject offerings in the business education area? Table 24 shows that emphasis is heavily concentrated in typing and bookkeeping. Both clerk-typists and bookkeepers are demand occupations. Study of employer needs, though, indicates that added emphasis should be given to the preparation of office machine operators, stenographers, and capable all-around secretaries.

TABLE 23

Course Offerings, Enrollments, and Facilities in the Region's Trade & Industry Curriculums: 1965

Course	Total Enrollment	Schools Reporting Enrollment In Facilities Deemed Poor	Adequate	Superior
General Shop	745	5) 329	5) 357	1) 59
Wood Shop	655	3) 237	6) 282	2) 136
Machine Shop	509	2) 149	5) 195	3) 165
Metals Shop	201		3) 201	
Auto Mechanics	237	2) 44	2) 193	
Drafting	956	8) 272	9) 613	1) 71
Graphic Arts – Printing	111		2) 41	1) 70
Electricity	71		1) 71	
Electronics	162		5) 140	1) 22
Home Building – Carpentry	84		3) 64	1) 20
Totals	3,731	1,031	2,157	543

Source: Survey by Robert Luter, Vocational Consultant, Calhoun Intermediate School District.

TABLE 24

Course Offerings, Enrollments, and Facilities in the Region's Business Education Curriculums: 1965

Course	Total Enrollment	Schools Reporting Enrollment In Facilities Deemed Poor	Adequate	Superior
Distributive Education	566	6) 165	3) 203	2) 198
Typing	2,570	3) 64	10) 1,287	6) 1,219
Shorthand	680		15) 580	2) 100
Bookkeeping	1,049		13) 863	1) 186
Business Machines	245	4) 111	3) 89	1) 45
Office Practice	310	6) 155	2) 114	1) 41
Stenography	18		1) 18	
Business Law	100		4) 100	
Totals	5,538	495	3,254	1,789

Source: Survey by Robert Luter, Vocational Consultant, Calhoun Intermediate School District.

TABLE 25

Course Offerings, Enrollments, and Facilities in
the Region's Home Economics and Agriculture Curriculums: 1965

Course	Enrollment	Schools Reporting Enrollment In Facilities Deemed Poor	Adequate	Superior
Homemaking	2,149	3) 304	10) 1,387	4) 458
Vocational Agriculture	644		10) 644	
Farm Shop	68	2) 37	1) 19	1) 12
Totals	2,861	341	2,050	470

Source: Survey by Robert Luter, Vocational Consultant, Calhoun Intermediate School District.

TABLE 26

Number of Region's Vocational and
Practical Arts Teachers Holding Vocational Certification: 1965
(N–129 Teachers)

Curriculum Area	N	Certificate Held: Permanent Vocational	Provisional Vocational	Special Vocational	Total Certified: N	%
Vocational Agriculture	11	3	1		4	36%
Home Economics	24	10	4		14	59
Business Education	44	1	7		8	18
Trade and Industry	50	2	5	5[1]	12	24
Totals	129	16	17	5	38	29%

[1] All non-degree teachers in their first year of teaching.

Source: Survey by Robert Luter, Vocational Consultant, Calhoun Intermediate School District.

One of the greatest demands revealed in this subsequent study is that for well-trained salespersons. Subject offerings and enrollments in the present programs of distributive education scarcely begin to meet this demand.

In the home economics area, Table 25 shows that the sole emphasis to date has been in homemaking. Course offerings should be expanded into such wage-earning demand occupations as waitresses, cooks or chefs, and laundry and dry-cleaning workers.

Returning to Chapter 5, fourteen of nineteen school administrators considered their equipment for vocational education to be inadequate. Thirteen considered their physical facilities inadequate. It is difficult to correlate directly these responses to those provided for Tables 23, 24, and 25. Information for these tables came from a combination of principals, counselors, and vocational education personnel. The term facilities, as used in the three tables, refers to both rooms and equipment. The school personnel who evaluated their own facilities generally responded that they were adequate. Some written and verbal comments, however, together with personal observations reveal that in many instances the room is adequate while the equipment is scarce or obsolete. In a few instances, the equipment is excellent but housed in crowded quarters.

Eight schools deemed their drafting facilities to be poor. This is interesting since drafting is one of the less expensive vocational areas to establish. Also, drafting is one of the demand occupations. Six schools reported poor facilities for distributive education, another demand area. The poor facilities outnumber the adequate and superior ones in distributive education. There are twice as many poor facilities as adequate and superior ones in use for office practice. Poor facilities equal the number of adequate and superior ones devoted to business machines, yet another demand area.

The inadequacy of physical facilities and equipment is related directly to the budget available for vocational education. We noted in Chapter 5 that fifteen of the nineteen school administrators considered their vocational education budget inadequate.

In the regional schools only 29% of the 129 teachers of vocational and practical arts subjects hold vocational certification. This is given to applicants who possess the combination of education and appropriate work experience specified in the State Plan for Vocational Education.

Noticeably lacking certification are teachers of Business Education and Trade & Industry. Only seven of the latter group hold regular certification with an additional five holding special certificates. These five are all non-degree persons in their first year of teaching. Table 26 presents added data.

Possibilities may exist for raising the percentage of vocationally certified teachers. Table 27 shows that 56% of the Trade & Industry group, for example, replied that they felt they had three years of appropriate work experience. This is approximately twice the percentage currently certified.

Most teachers of vocational and practical arts subjects are teaching in their major field of college study. Few are teaching additional courses outside their major area. The notable exception, as highlighted by Table 28 is the area of Vocational Agriculture where 82% of the teachers are so engaged. This likely reflects the national trend toward declining enrollments in Agriculture.

Table 29 reveals that nearly 1/3 of our region's vocational and practical arts teachers have over ten years of teaching experience. However, 1/3 to 1/2 have less than five years.

Kellogg Community College is providing service to youth and adults living within a forty mile radius in five counties. The college is one of the more comprehensive community colleges in the middle west. The 1965-66 catalog lists twenty curriculums in which students take freshmen and sophomore courses for transfer to a 4-year college or university.

The catalog also lists twenty curriculums in the terminal division. These programs are of special interest in this subsequent study. Each one has an occupational objective.

TABLE 27

Percentage of Region's Teachers with Two or more Years Work Experience in Their Teaching Field: 1965

(N–129 Vocational and Practical Arts Teachers)

Curriculum Area	N	Percentage
Vocational Agriculture	11	66%
Home Economics	24	21
Business	44	68
Trade and Industry[1]	50	56
	129	

[1] Three or more years for Trade and Industry teachers.

Source: Survey by Robert Luter, Vocational Consultant, Calhoun Intermediate School District.

TABLE 28

Relationship of Teaching Duties to College Studies: 1965

(N–129 Vocational and Practical Arts Teachers)

Curriculum Area	N	Teaching In Major Field	Additional Teaching Other Than Major Field
Vocational Agriculture	11	91%	82%
Home Economics	24	100	17
Business	44	91	12
Trade and Industry	50	88	6
	129		

Source: Survey by Robert Luter, Vocational Consultant, Calhoun Intermediate School District.

TABLE 29

Teaching Experience of Region's Vocational and Practical Arts Teachers: 1965

(N–129 Teachers)

Curriculum Area	N	Less Than 2 years	2–5 years	6–10 years	Over 10 years
Vocational Agriculture	11	27%	18%	18%	36%
Home Economics	24	13	21	29	38
Business	44	16	23	32	30
Trade and Industry	50	24	32	18	27
	129				

Source: Survey by Robert Luter, Vocational Consultant, Calhoun Intermediate School District.

They are designed to offer training leading directly into highly skilled or semi-professional employment. The current catalog lists Accounting, Business Management, five curriculums in varying phases of Electronic Data Processing, programs to prepare Executive, Medical, Legal, and Clerical Secretaries, curriculums in Chemical, Drafting, Electronic, Instrumentation, Industrial Management, and Mechanical Technologies, and two programs to prepare students to serve as Registered and Practical Nurses.

All instructors in the terminal division have Master's degrees except those in nursing. All have an impressive amount of business, industrial, or clinical experience. All instructors in reimbursable subjects--Data Processing, Secretarial, Practical Nursing, and the Technologies--hold vocational certification.

All buildings on the Kellogg Community College campus have been erected since 1959. The campus, with present construction and site acquisition, represents an investment of nearly $6 million dollars. Over $1 million is invested in special laboratories for terminal curriculums. Terminal students share other facilities such as the student center, library, and physical education building.

The enrollment at the college has grown from 94 students in 1956 to 2,521 students in September, 1965. Of this total, 30% are evening students. Of the 1,770 day students, 43% are enrolled in terminal programs.

Kellogg Community College also operates a Department of Adult Education. This department offers a variety of non-credit evening courses in vocational and avocational areas. Courses currently offered range from Graphoanalysis to Welding, from Stenoscript to an in-service course for nurses. This department has been planned to expand into training for many skilled and semi-skilled occupations. Approximately 350 are currently enrolled.

Summary

In Michigan in 1963 only seven youths out of ten were completing twelve years of schooling. In this four county region, one-third of the persons 25 years of age and over have completed eight grades or less. Only one-sixth have continued their education beyond high school. Regional enrollment in grades 9 – 12 in a recent school year totaled 16,630 youths. The majority of this group are not college-bound and could benefit from improved pre-employment training.

During 1962, only 142,475 students were being serviced in approved vocational classes in all of Michigan. Less than twelve per cent of these were enrolled in the high-demand distributive occupations.

Eighteen of the regional high schools indicated they offer a guidance program. However, thirteen of these offer no job placement service and ten do not practice a periodic follow-up of graduates. Among the eighteen schools, only six offer courses in Adult Education.

Seventeen high schools offer one or more courses in the areas of trade and industry, business education, and home economics. Many of these are not approved vocational classes. Some have avocational rather than vocational objectives. Others are serviced by teachers who do not hold vocational certification. Ten schools have one or more courses in vocational agriculture. These vocational and practical arts classes have a combined enrollment of over 12,000. However, many students are enrolled in two or more classes simultaneously.

Emphasis in the trade and industry area is now placed upon courses in general shop, wood shop, machine shop, and drafting. More emphasis could be placed upon metals shop instruction, particularly in welding and foundry techniques. A great short age of auto mechanics and service station attendants is indicated by employers, yet few schools are offering course work in this area. Further study should be given to coordinating several subjects to provide pre-employment preparation for such demand occupations as millwrights. Possibilities of pre-apprenticeship courses for carpenters, electricians, masons, and plumbers should be studied.

Emphasis in business education is now heavily concentrated in typing and bookkeeping. Both clerk-typists and bookkeepers are demand occupations. Additional emphasis should be given to preparation of office machine operators, stenographers, and capable all-round secretaries. There is great need for well-trained retail salespersons. Existing courses and enrollments in distributive education scarcely begin to meet this demand.

The sole emphasis to date in home economics has been in homemaking. Course offerings should be expanded into such wage-earning demand occupations as waitresses, cooks or chefs, and laundry and dry-cleaning workers.

Eight schools deemed their drafting facilities to be poor. Six schools reported poor facilities for distributive education. This is more than the number deemed adequate and superior. There are twice as many poor facilities as adequate and superior ones in use for office practice. Poor facilities equal the number of adequate and superior ones devoted to business machines. All four areas prepare workers for occupations that are in heavy employment demand. The inadequacy of physical facilities and equipment is related directly to inadequate budgets.

In the regional schools only 29% of the 129 teachers of vocational and practical arts subjects hold vocational certification. This certification is given to applicants who possess the combination of education and appropriate work experience specified in the State Plan for Vocational Education. Possibilities exist for raising this percentage. Many teachers feel they have the necessary qualifications.

Most teachers are teaching in the field in which they majored while in college. Only a few are teaching additional courses outside their major specialty. Nearly 1/3 of the 129 teachers of vocational and practical arts subjects have over ten years of teaching experience.

Kellogg Community College provides service to youth and adults living within a forty mile radius in five counties. The college is one of the more comprehensive in the middle west. The 1965–66 catalog lists twenty curriculums in which students take freshman and sophomore courses for transfer to a 4-year college or university. The catalog also lists twenty curriculums in the terminal division. Each of these have an occupational objective leading directly into highly skilled or semi-professional employment. All instructors in reimbursable subjects hold vocational certification. Many have completed work beyond the Master's degree. Over $1 million is invested in laboratories for the terminal curriculums. Forty-three per cent of day students are currently enrolled in terminal programs. A Department of Adult Education offers a variety of non-credit evening courses and plans to expand into training for many skilled and semi-skilled occupations.

7

Economic Aspects

Any cooperative working relationship between schools and intermediate districts to bring together students with special training needs will depend upon a willingness to explore new methods of financing. Sufficient support must be provided to obtain competent faculty, specialized equipment, and adequate housing.

How does the income of our families compare with the rest of the state? Is our economy healthy? How do present tax rates compare with the state average? How much money can be raised by ½ or 1 mill of tax spread over an intermediate district?

Table 30 gives us a view of the median income of our region's families, the percentage of families with low and high income, and compares this with similar data for the entire state.

TABLE 30

Selected Economic Characteristics of the Region: 1960

County	Median income of families[1]	Percent of families with incomes of under $3,000	Percent of families with incomes of $10,000 and over
Barry	$5,592	20.5	10.3
Branch	5,449	22.2	11.7
Calhoun	6,376	14.2	16.5
Eaton	5,821	17.6	12.7
State	6,256	15.7	17.4

[1]Based on income for the year 1959.

Source: U. S. Census of Population: 1960.

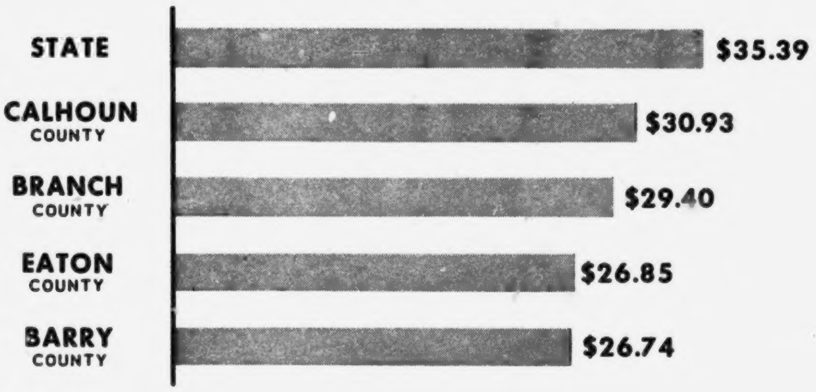
Families in Branch, Barry, and Eaton counties earn below the state median income by 13%, 11%, and 7% respectively. Calhoun county families slightly exceed the state median. Barry and Branch counties noticeably exceed the state average in percentage of families with low incomes. Only Calhoun county approaches the the state average in families with incomes of $10,000 and over. Barry, Branch and Eaton are particularly lacking in this category.

One standard method of measuring the health of an economy is to gauge its retail sales. Table 31 does this task for our region. In the last ten years retail sales have steadily increased. An average of the four counties show an 11.5 percent increase from 1954 to 1958 and 16.7 percent increase from 1958 to 1963. This compares to statewide county averages of 8.9 percent and 23.7 percent respectively.

Family income is below the state median in three of the four counties. A large percentage of families have incomes of less than $3,000.00 per year. Retail sales, while increasing steadily, have done so at a pace somewhat slower than the state average. Adequate vocational education programs, as sought for this region, are expensive to establish and opeate. A cooperative approach as suggested by the "Committee of 100" would lessen the financial burden on individual families. Figure 5 compares average property tax rates in

FIGURE 5

Average Property Tax Rates, All Purposes - 1962



Average tax rates (mills) per $1,000 of State Equalized Valuation

TABLE 31

Retail Sales: 1954, 1958, and 1963

County	(In thousand of dollar) 1954[1]	1958[2]	Percentage Increase	Estimated 1963[3]	Percentage Increase
Barry	$ 24,429	$ 26,068	6.7	$ 28,535	9.4
Branch	32,541	36,340	11.7	40,913	12.6
Calhoun	138,184	159,857	15.7	188,620	18.0
Eaton	36,342	40,746	12.1	51,654	26.8
State Total	8,167,632	8,897,661		11,013,303	
(County Average)	(98,405)	(107,200)	8.9	(132,690)	23.7

Sources: [1]U. S. Census of Business: 1954, Retail Trade.
[2]U. S. Census of Business: 1958, Retail Trade.
[3]Sales Management, "Survey of Buying Power." 1964.

TABLE 32

Property Tax Potential: 1965

Intermediate District	State Equalized Valuation, 1965[2]	Dollars Raised By ½ Mill Tax	Dollars Raised By 1 Mill Tax
Barry	$ 76,367,989	$ 38,184	$ 76,368
Branch	89,479,532	44,740	89,480
Calhoun	428,020,544	214,010	428,020
Eaton[1]	17,822,087	8,911	17,822
Total	$611,690,152	$305,845	$611,690

[1]Includes only the Bellevue and Olivet districts.
[2]State equalized valuation is approximately 50% of the sale value of the property.
Example: A home with a sale value of $20,000 would have a state equalized valuation of about $10,000.
A 1 mill rate would cost $10.00 per year.

each of the four counties with the state average. Rates in this region are 4.46 to 8.65 mills lower than the state average. A modest rise in these rates would not destroy this comparative advantage.

How much support for competent faculty, specialized equipment, and adequate housing of an area vocational center can be raised by ½ or 1 mill of tax spread over an intermediate school district? Table 32 provides the answer. Some additional information is given to permit each homeowner to compute his share of the cost.

Summary

Any plan to bring together students with special training needs will require adequate financing. Sufficient support must be provided to obtain competent faculty, specialized equipment, and adequate housing.

Family income is below the state median in three of the four counties. A large percentage of families have incomes of less than $3,000.00 per year. Retail sales, while increasing steadily, have done so at a pace somewhat slower than the state average. Adequate vocational education programs, as sought for this region, are expensive to establish and operate. A cooperative approach as suggested by the "Committee of 100" would lessen the financial burden on individual families.

Property tax rates in this region are 4.46 to 8.65 mills lower than the state average. A modest rise in these rates would not destroy this comparative advantage. One-half mill of tax spread on the state equalized valuation of the intermediate districts of Barry, Branch, Calhoun and a portion of Eaton would provide $305,845 per year for the support of an area vocational center. This would cost approximately $5.00 per year for the owner of a home with a sale value of $20,000.

8

Population Facts and Figures

Implicit in the recommendations of the Committee of 100 was the bringing together of students with special training needs. The purpose was to develop a population large enough to make the specialty course offerings economical and efficient.

What is the population of our region? How is it changing? What is the population in age groups that could be served by a regional center(s) for vocational-technical education? What is the density of population? What cities are within the area?

Table 33 gives us the population by county in each of the last three census. The region as a whole is growing at a slightly slower rate than the state. The four-counties had a 1960 population of 255,183.

How many youth and adults could be served by a regional center(s) for vocational education? Some idea is gained by a look at the population in each county between the ages of 15 and 54. Much of the group between 15 and 24 years of age are candidates for some form of pre-employment training. There were 35,223 persons in this category at the time of the 1960 census. In this age group, 16,630 were enrolled in high school in a recent year. (See Table 21). About 3,500 will graduate in a given year. Twenty per cent of these graduates will likely complete a 4-year college degree. It seems likely that another 30% will complete a community college terminal program, a business college or trade school course, apprenticeship or some other form of currently available post-secondary training. This still leaves about 1,750 in the four counties who must enter the labor market each year with only a high school preparation. Perhaps half these should have occupational preparation not now available in their home high schools. Some of the 92,473 remaining population are likely candidates for re-training and upgrading of skills.

The striking fact in Figure 6 is that Calhoun County has over one-half the total population of the region. This percentage rises to nearly two-thirds when we consider that only the Bellevue and Olivet communities of Eaton County are participating in this subsequent study.

FIGURE 6

Regional Population And County Composition: 1960

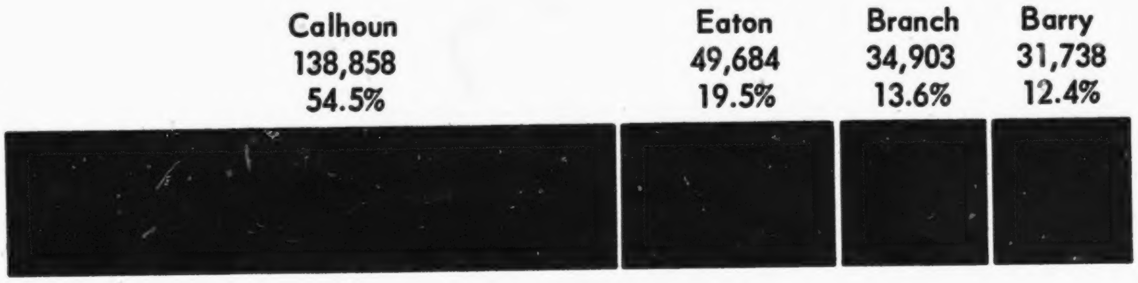


TABLE 33

Population of Region and Percent Change: 1940–1960

	Population			Percent Change	
County	1940	1950	1960	1940–1950	1950–1960
Barry	22,613	26,183	31,738	15.8%	21.2%
Branch	25,845	30,202	34,903	16.9	15.6
Calhoun	94,206	120,813	138,858	28.2	14.9
Eaton	34,124	40,023	49,684	17.3	24.1
Totals	176,788	217,221	255,183	22.8	17.5
State	5,256,106	6,371,766	7,823,194	21.2	22.8

Source: U.S. Census of Population: 1950 and U.S. Census of Population: 1960.

TABLE 34

Population, Ages 15–54: 1960

	Age Group (Years)			
County	15–24	25–39	40–54	Total
Barry	4,251	5,705	5,243	15,199
Branch	5,095	6,167	5,888	17,150
Calhoun	19,014	28,045	23,952	71,011
Eaton	6,863	9,332	8,141	24,336
Total	35,223	49,249	43,224	127,696

Source: U.S. Census of Population: 1960.

Three of the four counties in the region are considerably below average in density of population. Two are one-half or less of the state average density. Only Calhoun exceeds the average. Table 35 provides the details.

TABLE 35
Population Density and Number of Households

County	Persons per square mile, 1960[1]	Estimated Households, 1963[2]
Barry	57.8	9,300
Branch	69.0	10,200
Calhoun	195.9	42,800
Eaton	87.6	15,000
State	137.2	

Sources: [1]U.S. Census of Population: 1960.
[2]Sales Management, "Survey of Buying Power," 1964.

Most of Eaton County is not participating in this subsequent study. In the remaining territory only five municipalities exceed 5,000 inhabitants. Three of the five are in Calhoun County.

TABLE 36
Municipalities Having
5,000 Inhabitants or More: 1960

County	Municipality	1960 Population
Barry	Hastings	6,375
Branch	Coldwater	8,880
Calhoun	Albion	12,749
	Battle Creek	44,169
	Marshall	6,736

Source: U.S. Census of Population: 1960.

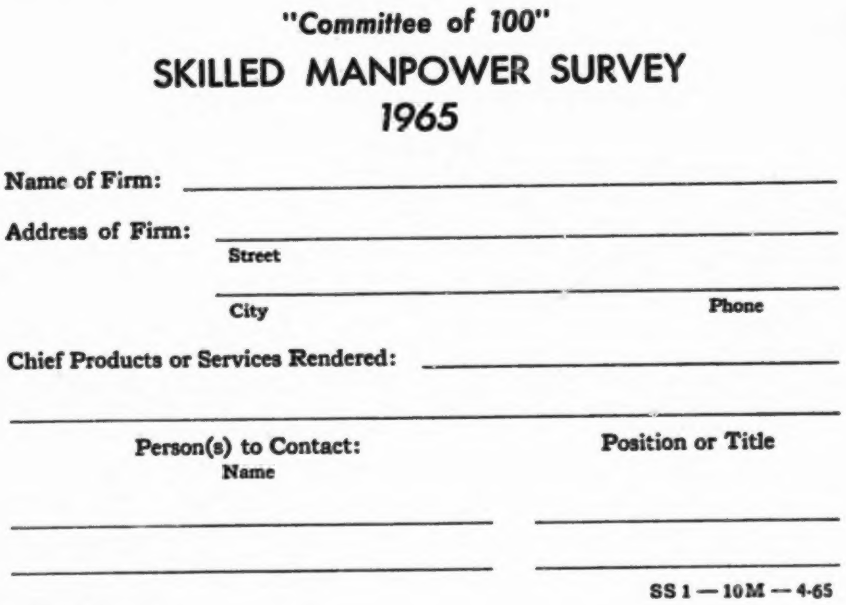
Summary

Implicit in the recommendations of the Committee of 100 was the bringing together of students with special training needs. The purpose was to develop a population large enough to make the specialty course offerings economical and efficient.

Much of the group between 15 and 24 years of age are candidates for some form of pre-employment training. There were 35,223 in this category at the time of the 1960 census. About 3,500 will graduate from high school in a given year. Twenty per cent will go on to complete a 4-year college degree. Another 30% will likely go into community college, business college, trade school, or apprenticeship programs. This still leaves about 1,750 in the four counties who must enter the labor market each year with only a high school preparation. Perhaps half these should have occupational preparation not now available in their home high schools.

Calhoun County has nearly two-thirds of the total population in the region covered by this study. Two of the counties have one-half or less of the state average population density expressed in persons per square mile. Calhoun County exceeds the average density. In the territory covered by this study, there are only five municipalities which exceed 5,000 inhabitants. Three of the five are in Calhoun County.

Appendix A



"Committee of 100"
SKILLED MANPOWER SURVEY
1965

Name of Firm: ____________________

Address of Firm: ____________________
Street
____
City Phone

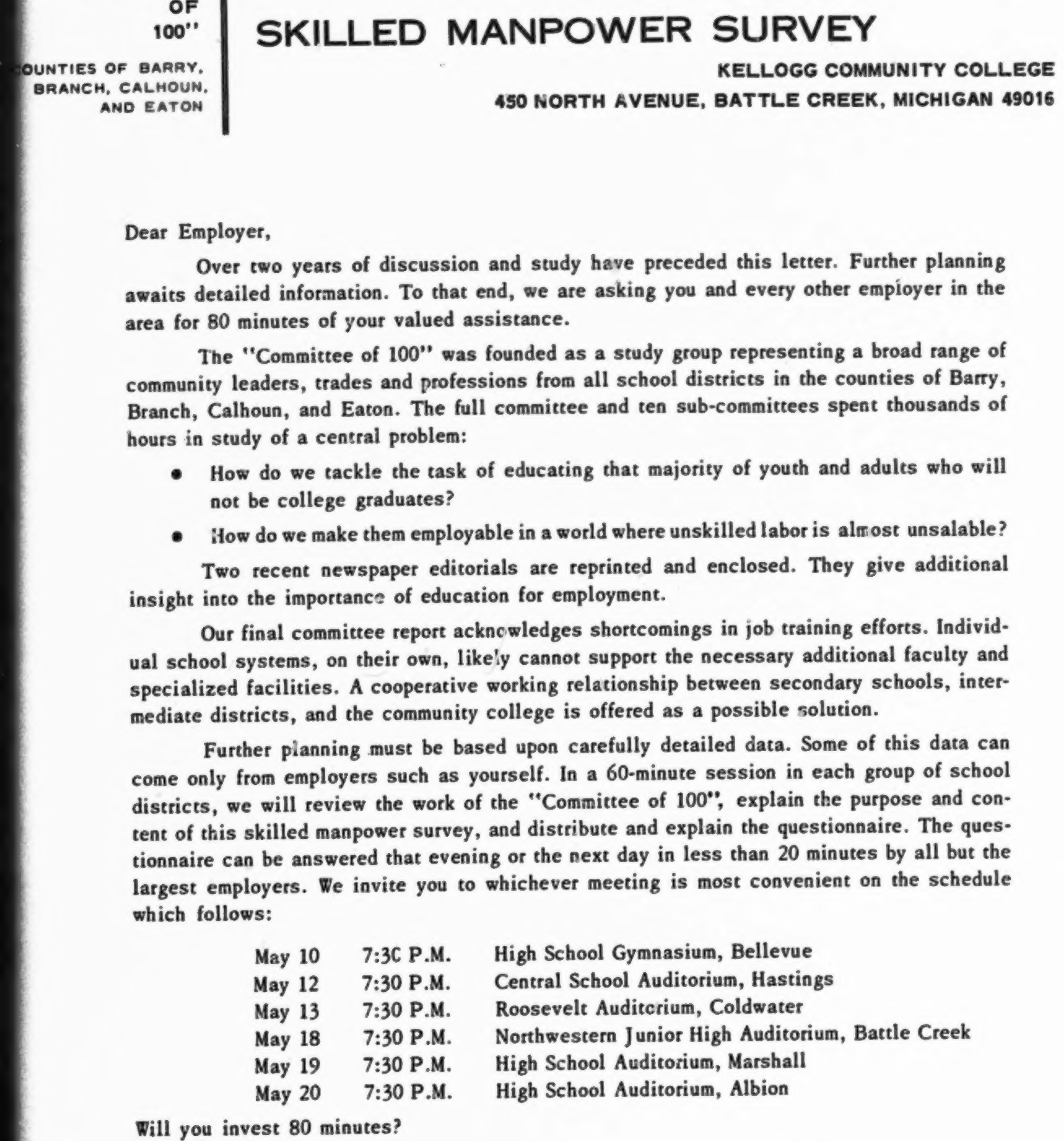
Chief Products or Services Rendered: ____________________
____

Person(s) to Contact: Name	Position or Title

SS 1 — 10M — 4-65

Appendix Figure A-1

Employer File Card



"COMMITTEE
OF
100"
COUNTIES OF BARRY,
BRANCH, CALHOUN,
AND EATON

SKILLED MANPOWER SURVEY
KELLOGG COMMUNITY COLLEGE
450 NORTH AVENUE, BATTLE CREEK, MICHIGAN 49016

Dear Employer,

Over two years of discussion and study have preceded this letter. Further planning awaits detailed information. To that end, we are asking you and every other employer in the area for 80 minutes of your valued assistance.

The "Committee of 100" was founded as a study group representing a broad range of community leaders, trades and professions from all school districts in the counties of Barry, Branch, Calhoun, and Eaton. The full committee and ten sub-committees spent thousands of hours in study of a central problem:

- How do we tackle the task of educating that majority of youth and adults who will not be college graduates?
- How do we make them employable in a world where unskilled labor is almost unsalable?

Two recent newspaper editorials are reprinted and enclosed. They give additional insight into the importance of education for employment.

Our final committee report acknowledges shortcomings in job training efforts. Individual school systems, on their own, likely cannot support the necessary additional faculty and specialized facilities. A cooperative working relationship between secondary schools, intermediate districts, and the community college is offered as a possible solution.

Further planning must be based upon carefully detailed data. Some of this data can come only from employers such as yourself. In a 60-minute session in each group of school districts, we will review the work of the "Committee of 100", explain the purpose and content of this skilled manpower survey, and distribute and explain the questionnaire. The questionnaire can be answered that evening or the next day in less than 20 minutes by all but the largest employers. We invite you to whichever meeting is most convenient on the schedule which follows:

May 10	7:30 P.M.	High School Gymnasium, Bellevue
May 12	7:30 P.M.	Central School Auditorium, Hastings
May 13	7:30 P.M.	Roosevelt Auditorium, Coldwater
May 18	7:30 P.M.	Northwestern Junior High Auditorium, Battle Creek
May 19	7:30 P.M.	High School Auditorium, Marshall
May 20	7:30 P.M.	High School Auditorium, Albion

Will you invest 80 minutes?

Sincerely,
Stephen M Glaza
STEPHEN M. GLAZA
Executive Secretary

Sincerely
James E. Cook
JAMES E. COOK
Survey Director

Appendix Figure A-2

Invitation To Participate

"The need for trained workers is critical on all levels, from chemical technicians to gardeners and handymen. Intelligent, broadly based job training will accomplish more for the dignity of man than a world of windy platitudes about abstract matters. Work is the salvation of us all. Work in which we can take pride has enduring satisfactions. Good craftsmen always win respect for themselves and rarely lack work or the material rewards of their skill. Job-training proposals being suggested in many quarters hold out one bright hope for the improvement of our society."

An excerpt from an editorial, WASHINGTON POST,
Washington, D.C., March 7, 1965

Local Initiative Helps Meet Job Needs Soundly

According to Labor Secretary W. Willard Wirtz, the national economy "will be hit a real crack—harder than ever before" in June when more than one million young people leave school and enter the labor market looking for jobs.

Certainly by now it is well known that youth unemployment is a serious problem. Secretary Wirtz' comment serves to warn that the problem will get worse.

As Eric Sevareid observed on this page yesterday, "our troubles do not come from any drop in general production. They come from the arrival to adulthood of the war baby crop (about 26 million for this decade) . . . But essentially they come from the simple inability of millions of the newly grown-up to cope with new kinds of jobs in the new and very different economy the scientific revolution is creating."

* * *

Fortunately for this area, Calhoun and three neighboring counties—Barry, Branch and Eaton—have taken local initiative to face up to the problem.

By the end of this year detailed information will be at hand on exactly what the job needs of this area are, and what all employers, big and small, judge they will be in the foreseeable future.

Out of this information will come definitive plans for job education throughout the area. Our young people will be trained for the real needs of the real working world as they never have been before.

The manpower needs survey, to be directed by James E. Cook of Kellogg Community College with the University of Michigan's Bureau of School Services as consultant, will take the guesswork out of vocational curriculum planning.

* * *

This survey and action program stems directly from the studies completed last year by the locally-initiated, four-county "Committee of 100."

Without doubt this is the most important action to come so far out of the committee's pioneering work. Indeed, it is central to the citizen group's entire set of recommendations.

Granted, the local area program can't get moving in time to cope with this June's outpouring of graduates. But in years ahead, when the problem of more jobs for more young workers becomes increasingly acute, this area will have contributed to the solution.

A reprint of an editorial, ENQUIRER AND NEWS,
Battle Creek, Mich., April 12, 1965

Appendix Figure A-3
Editorial Reprints

SKILLED MANPOWER SURVEY
CONFIDENTIAL QUESTIONNAIRE ON SKILLED MANPOWER REQUIREMENTS AND TRAINING PREFERENCES
INFORMATION

INTRODUCTION:

This survey is an outgrowth of the months of study by the "Committee of 100" of a central problem:

- How do we tackle the task of educating that majority of youth and adults who will not be college graduates?
- How do we make them employable in a world where unskilled labor is almost unsalable?

The "Committee of 100" issued a **Blueprint for Action** which suggests a cooperative working relationship between secondary schools, intermediate districts, and the community college in an effort to improve and expand education for employment.

Further planning must be based upon carefully detailed data. Some of this data can come only from employers such as yourself. It is the purpose of this questionnaire to receive this data from you as easily as possible.

INSTRUCTIONS:

Identification – The questionnaire is divided into eleven categories, such as "Clerical Occupations". The occupations represented by your employees may be clustered on one page or scattered over several. You need not give the identification information on pages where you have no employees.

Column 1 – Occupation.
This is a listing of occupations within each category. Since this survey is concerned with education for those who likely will not be college graduates, occupations generally requiring a Bachelor's degree or more are not listed. A space is provided at the foot of this column to write in an occupation we may have neglected.

Column 2 – Number now employed.
Enter the number of male workers and female workers, both part-time and full-time, in each occupation who have been on your payroll during the current month.

Column 3 – Number current vacancies.
Enter the number of vacancies in each occupation that you are currently trying to fill.

Column 4 – Estimated number needed in next five years.
Enter your best estimate of the number of expansions and replacements needed in each occupation by June, 1970. Keep in mind such factors as expected business volume, changes in operating or production methods, new or discontinued products or services.

Column 5 – Is this a "hard to fill" job?
Answer yes or no based upon your own experiences with this occupation.

Column 6 – Usual recruitment sources.
Check one or more of the sources from whom you normally recruit workers in this occupation.

Column 7 – Educational preference.
Check the one column which you feel would give your employees good preparation for this occupation.

Columns 8 and 9
Self explanatory.

Appendix Figure A-4
Instructions For Questionnaire.

A. CLERICAL OCCUPATIONS

SKILLED MANPOWER SURVEY

NAME OF COMPANY

ADDRESS OF COMPANY

PRINCIPAL PRODUCT OR SERVICE

TOTAL NUMBER OF EMPLOYEES

NAME OF PERSON COMPLETING FORM

TITLE OF PERSON COMPLETING FORM

1. OCCUPATION	2. NUMBER NOW EMPLOYED		3. NUMBER CURRENT VACANCIES	4. ESTIMATED NUMBER NEEDED IN NEXT FIVE YEARS		5. IS THIS A 'HARD TO FILL' JOB?		6. USUAL RECRUITMENT SOURCES			7. EDUCATIONAL PREFERENCE (CHECK ONE)					8. DO YOU HAVE YOUR OWN TRAINING PROGRAM IN THIS OCCUPATION?		9. WOULD YOU BE INTERESTED IN ADDITIONAL TRAINING FOR THESE WORKERS IN AN AREA SCHOOL?	
	MALE	FEMALE		EXPANSION	REPLACEMENT	YES	NO	UPGRADE PRESENT EMPLOYEES	AREA AGENCIES AND INSTITUTIONS	OUT-OF-AREA AGENCIES AND INSTITUTIONS	LESS THAN HIGH SCHOOL GRADUATE	HIGH SCHOOL GRADUATE	VOCATIONAL OR TRADE SCHOOL GRADUATE	BUSINESS COLLEGE TECHNICAL INSTITUTE COMMUNITY COLLEGE TERMINAL GRADUATE	COLLEGE GRADUATE	YES	NO	YES	NO
001. Accountant																			
002. Bank clerk																			
003. Bookkeeper																			
004. Cashier																			
005. Claim adjuster																			
006. Clerk-typist																			
007. Electronic data processing operator																			
008. General office worker																			
009. Hotel/motel room clerk																			
010. Office machine operator																			
011. Office manager																			
012. Postal clerk																			
013. Receptionist																			
014. Secretary																			
015. Shipping and receiving clerk																			
016. Stenographer																			
017. Stockboy																			
018. Teller																			
019. OTHER (WRITE IN)																			

COMMENTS:

REPLIES WILL BE KEPT CONFIDENTIAL AND REPORTED ONLY IN SUMMARY TOTALS

Appendix Figure A-5

Questionnaire--Sample Page

E. MANUFACTURING OCCUPATIONS (Continued)
- 082. Electroplater
- 083. Foreman
- 084. Forge Operator
- 085. Inspector
- 086. Instrument Maker
- 087. Instrumentation Technician
- 088. Layout Man
- 089. Machine Operator
- 090. Machine Tool Operator
- 091. Machinist, All-Round
- 092. Metallurgical Technician
- 093. Molder
- 094. Paper Machine Operator
- 095. Patternmaker
- 096. Power Truck Operator
- 097. Printer - Slotter Operator
- 098. Production Control Technician
- 099. Production Painter
- 100. Quality Control Technician
- 101. Setup Man
- 102. Stationery Fireman (Boiler)
- 103. Time Study Technician
- 104. Tool Maker
- 105. Tool Room Attendant
- 106. Welder and Flame Cutter
- 107. Other: ....
- 108. Other: ....

F. MECHANICS & REPAIRMEN OCCUPATIONS
- 109. Air-Conditioning, Refrigeration and/or Heating Mechanic
- 110. Air-Conditioning, Referigeration and/or Heating Technician
- 111. Appliance Repairman
- 112. Automobile Mechanic
- 113. Aviation Mechanic
- 114. Business Machine Serviceman
- 115. Diesel Mechanic
- 116. Electronic Technician
- 117. Industrial Machinery Repairman
- 118. Instrument Repairman
- 119. Maintenance Electrician
- 120. Millwright
- 121. Shoe Repairman
- 122. Television and Radio Repairman
- 123. Watch Repairman
- 124. Jeweler and Jewelry Repairman
- 125. Other: ....

G. BUILDING TRADES OCCUPATIONS
- 126. Architectural Draftsman
- 127. Bricklayer and Mason
- 128. Cabinet Maker
- 129. Carpenter
- 130. Civil and Highway Technician Surveyor
- 131. Electrician
- 132. Floor Covering Installer
- 133. Glazier
- 134. Heavy Equipment Operator
- 135. Ironworker
- 136. Laborer
- 137. Painter
- 138. Paperhanger
- 139. Plasterer
- 140. Plumber and Pipefitter
- 142. Sheet Metal Worker
- 143. Supervisor
- 144. Tile Setter
- 145. Other: ....

H. GRAPHIC ARTS & PRINTING OCCUPATIONS
- 146. All-Round Printer
- 147. Bookbinder
- 148. Commercial Artist
- 149. Compositor
- 150. Electrotyper
- 151. Linotype Operator
- 152. Lithographic Cameraman
- 153. Monotype Operator
- 154. Phototypesetting Operator
- 155. Photoengraver
- 156. Pressman
- 157. Stereotyper
- 158. Other: ....

J. TRANSPORTATION OCCUPATIONS
- 159. Ambulance Driver
- 160. Brakeman
- 161. Bus Driver
- 162. Conductor
- 163. Dispatcher
- 164. Locomotive Engineer
- 165. Locomotive Fireman
- 166. Signal Department Worker
- 167. Station Agent
- 168. Taxi Driver
- 169. Tracks Worker
- 170. Truck Driver (Local)
- 171. Truck Driver (Over-the-Road)
- 172. Other: ....

K. UTILITIES OCCUPATIONS
- 173. Electrical Technician
- 174. Installer and Repairman (Telephone)
- 175. Installer and Repairman (Meter)
- 176. Lineman and Cable Splicer
- 177. Meter Reader
- 178. Power Plant Operator
- 179. Substation Operator
- 180. Telephone Operator
- 181. Water Department or Sanitation Worker
- 182. Other: ....

L. AGRICULTURAL OCCUPATIONS
- 183. Farm Owner – Manager
- 184. Laborer
- 185. Nurseryman
- 186. Packer
- 187. Poultryman
- 188. Other: ....

REPLIES WILL BE KEPT CONFIDENTIAL AND REPORTED ONLY IN SUMMARY TOTALS Nº 5425

"COMMITTEE
OF
100"

COUNTIES OF BARRY,
BRANCH, CALHOUN,
AND EATON

SKILLED MANPOWER SURVEY

KELLOGG COMMUNITY COLLEGE
450 NORTH AVENUE, BATTLE CREEK, MICHIGAN 49016

Kellogg Community College is studying ways to improve education in our four county area. We know the majority of students will not be college graduates. This majority will need training for employment.

To do a good job of planning training programs, much information must be gathered. Some of this data can come only from former students like yourself.

We need 20 minutes of your time to answer the questions on the next three pages. Your answers will be confidential. You will notice your name is not requested.

Help our survey reach its goal. Help yourself to better training for better jobs.

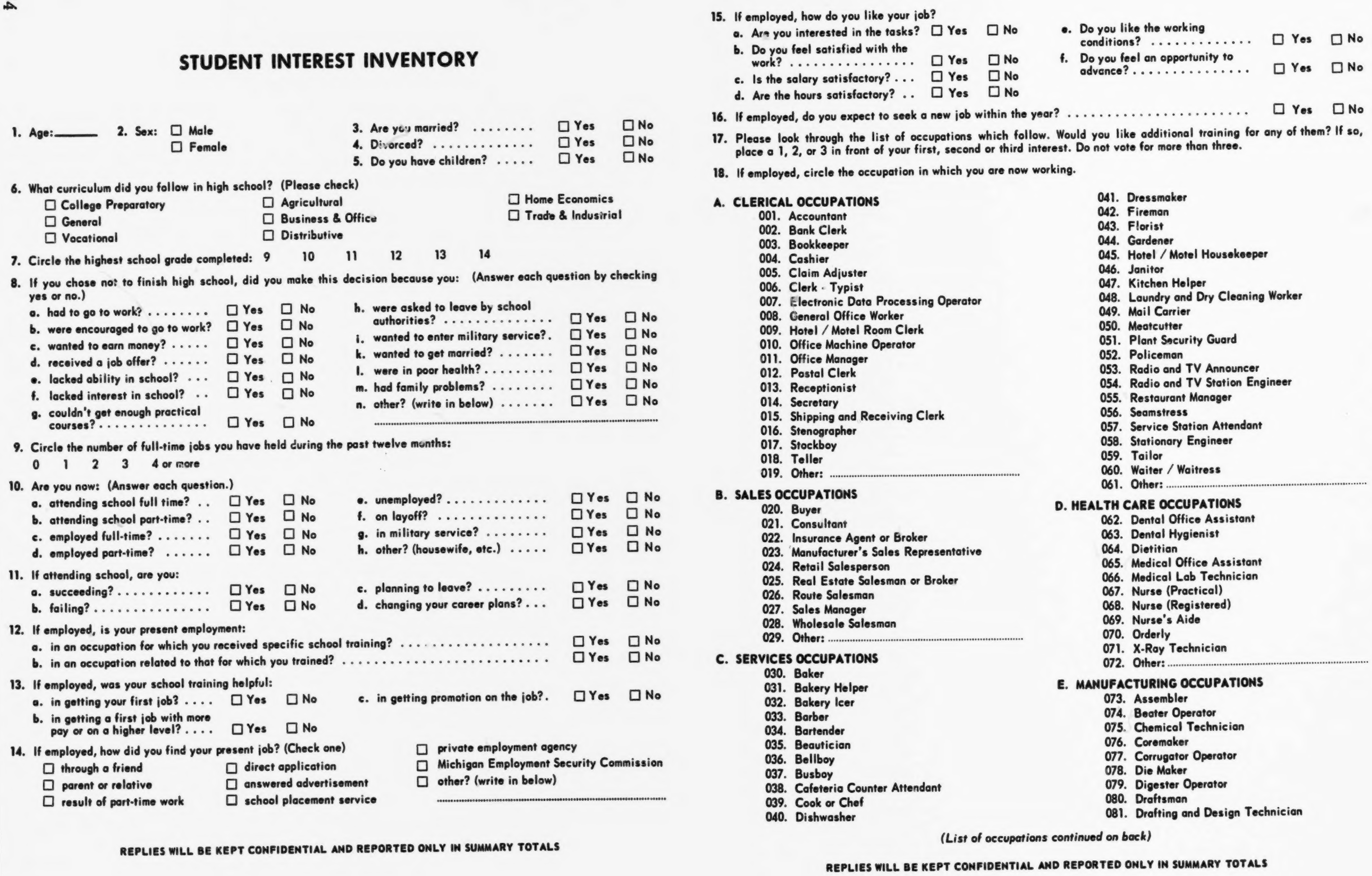
Use the postpaid envelope to return your answers. Your prompt reply is necessary.

Sincerely,

James E. Cook

JAMES E. COOK
Survey Director

Appendix Figure A-6
Student Interest Inventory



STUDENT INTEREST INVENTORY

1. Age:______ 2. Sex: ☐ Male ☐ Female

3. Are you married? . . . . ☐ Yes ☐ No
4. Divorced? . . . . ☐ Yes ☐ No
5. Do you have children? . . . . . ☐ Yes ☐ No

6. What curriculum did you follow in high school? (Please check)
☐ College Preparatory
☐ General
☐ Vocational
☐ Agricultural
☐ Business & Office
☐ Distributive
☐ Home Economics
☐ Trade & Industrial

7. Circle the highest school grade completed: 9 10 11 12 13 14

8. If you chose not to finish high school, did you make this decision because you: (Answer each question by checking yes or no.)
a. had to go to work? . . . . ☐ Yes ☐ No
b. were encouraged to go to work? ☐ Yes ☐ No
c. wanted to earn money? . . . . . ☐ Yes ☐ No
d. received a job offer? . . . . . . ☐ Yes ☐ No
e. lacked ability in school? . . . ☐ Yes ☐ No
f. lacked interest in school? . . ☐ Yes ☐ No
g. couldn't get enough practical courses? . . . . ☐ Yes ☐ No
h. were asked to leave by school authorities? . . . . ☐ Yes ☐ No
i. wanted to enter military service? . ☐ Yes ☐ No
k. wanted to get married? . . . . ☐ Yes ☐ No
l. were in poor health? . . . . ☐ Yes ☐ No
m. had family problems? . . . . ☐ Yes ☐ No
n. other? (write in below) . . . . ☐ Yes ☐ No
....

9. Circle the number of full-time jobs you have held during the past twelve months:
0 1 2 3 4 or more

10. Are you now: (Answer each question.)
a. attending school full time? . . ☐ Yes ☐ No
b. attending school part-time? . . ☐ Yes ☐ No
c. employed full-time? . . . . ☐ Yes ☐ No
d. employed part-time? . . . . . . ☐ Yes ☐ No
e. unemployed? . . . . ☐ Yes ☐ No
f. on layoff? . . . . ☐ Yes ☐ No
g. in military service? . . . . ☐ Yes ☐ No
h. other? (housewife, etc.) . . . . . ☐ Yes ☐ No

11. If attending school, are you:
a. succeeding? . . . . ☐ Yes ☐ No
b. failing? . . . . ☐ Yes ☐ No
c. planning to leave? . . . . ☐ Yes ☐ No
d. changing your career plans? . . . ☐ Yes ☐ No

12. If employed, is your present employment:
a. in an occupation for which you received specific school training? . . . . ☐ Yes ☐ No
b. in an occupation related to that for which you trained? . . . . ☐ Yes ☐ No

13. If employed, was your school training helpful:
a. in getting your first job? . . . . ☐ Yes ☐ No
b. in getting a first job with more pay or on a higher level? . . . . ☐ Yes ☐ No
c. in getting promotion on the job? . ☐ Yes ☐ No

14. If employed, how did you find your present job? (Check one)
☐ through a friend
☐ parent or relative
☐ result of part-time work
☐ direct application
☐ answered advertisement
☐ school placement service
☐ private employment agency
☐ Michigan Employment Security Commission
☐ other? (write in below)
....

REPLIES WILL BE KEPT CONFIDENTIAL AND REPORTED ONLY IN SUMMARY TOTALS

15. If employed, how do you like your job?
a. Are you interested in the tasks? ☐ Yes ☐ No
b. Do you feel satisfied with the work? . . . . ☐ Yes ☐ No
c. Is the salary satisfactory? . . . ☐ Yes ☐ No
d. Are the hours satisfactory? . . ☐ Yes ☐ No
e. Do you like the working conditions? . . . . ☐ Yes ☐ No
f. Do you feel an opportunity to advance? . . . . ☐ Yes ☐ No

16. If employed, do you expect to seek a new job within the year? . . . . ☐ Yes ☐ No

17. Please look through the list of occupations which follow. Would you like additional training for any of them? If so, place a 1, 2, or 3 in front of your first, second or third interest. Do not vote for more than three.

18. If employed, circle the occupation in which you are now working.

A. **CLERICAL OCCUPATIONS**
001. Accountant
002. Bank Clerk
003. Bookkeeper
004. Cashier
005. Claim Adjuster
006. Clerk - Typist
007. Electronic Data Processing Operator
008. General Office Worker
009. Hotel / Motel Room Clerk
010. Office Machine Operator
011. Office Manager
012. Postal Clerk
013. Receptionist
014. Secretary
015. Shipping and Receiving Clerk
016. Stenographer
017. Stockboy
018. Teller
019. Other: ....

B. **SALES OCCUPATIONS**
020. Buyer
021. Consultant
022. Insurance Agent or Broker
023. Manufacturer's Sales Representative
024. Retail Salesperson
025. Real Estate Salesman or Broker
026. Route Salesman
027. Sales Manager
028. Wholesale Salesman
029. Other: ....

C. **SERVICES OCCUPATIONS**
030. Baker
031. Bakery Helper
032. Bakery Icer
033. Barber
034. Bartender
035. Beautician
036. Bellboy
037. Busboy
038. Cafeteria Counter Attendant
039. Cook or Chef
040. Dishwasher
041. Dressmaker
042. Fireman
043. Florist
044. Gardener
045. Hotel / Motel Housekeeper
046. Janitor
047. Kitchen Helper
048. Laundry and Dry Cleaning Worker
049. Mail Carrier
050. Meatcutter
051. Plant Security Guard
052. Policeman
053. Radio and TV Announcer
054. Radio and TV Station Engineer
055. Restaurant Manager
056. Seamstress
057. Service Station Attendant
058. Stationary Engineer
059. Tailor
060. Waiter / Waitress
061. Other: ....

D. **HEALTH CARE OCCUPATIONS**
062. Dental Office Assistant
063. Dental Hygienist
064. Dietitian
065. Medical Office Assistant
066. Medical Lab Technician
067. Nurse (Practical)
068. Nurse (Registered)
069. Nurse's Aide
070. Orderly
071. X-Ray Technician
072. Other: ....

E. **MANUFACTURING OCCUPATIONS**
073. Assembler
074. Beater Operator
075. Chemical Technician
076. Coremaker
077. Corrugator Operator
078. Die Maker
079. Digester Operator
080. Draftsman
081. Drafting and Design Technician

(List of occupations continued on back)

REPLIES WILL BE KEPT CONFIDENTIAL AND REPORTED ONLY IN SUMMARY TOTALS

Appendix Figure A-6
Student Interest Inventory

Appendix B

Appendix Figure B-1

Formulas Used In Projections

The numerical predictions contained in this report are based on the following formulae:

Estimation of Range

confidence level	minium	mean	maximum
68%	$(\bar{x}-\sigma)T$	$\bar{x}T$	$(\bar{x}+\sigma)T$
95%	$(\bar{x}-1.96\,\sigma)T$	$\bar{x}T$	$(\bar{x}+1.96\,\sigma)T$

where $\bar{x}$ is the mean of the sample for a given catagory.

$$\bar{x}=\frac{\sum x_i\, n_i}{N}$$

where x_i = number of positions open in the catagory.
n_i = number of employers reporting x_i positions open in the catagory.
N = number of employers reporting for the catagory.

and σ is the standard deviation of the sample for the given catagory.

$$\sigma=\sqrt{\frac{\sum (x_i-\bar{x})^2 n_i}{N}}$$

To further illustrate, consider "estimated needs for expansion", occupation 001 under manufacturing. Of the 106 returns from manufacturing companies, 95 reported no positions, six reported one position, and five reported two positions.

$$\bar{x}=\frac{\sum x_i\, n_i}{N}$$

$$=\frac{(0 \times 95)+(1 \times 6)+(2 \times 5)}{106}$$

$$= 0.151$$

$$\sigma=\sqrt{\frac{\sum (x_i-\bar{x})^2 n_i}{N}}$$

$$=\sqrt{\frac{\left[(0-0.151)^2 \times 95\right]+\left[(1-0.151)^2 \times 6\right]+\left[(2-0.151)^2 \times 5\right]}{106}}$$

$$= 0.472$$

It was determined that there were 222 manufacturing companies in the area surveyed; therefore, for calculations in this example:

$$T = 222.$$

To find the range at a 68% confidence level:

$$\begin{aligned} \text{minimum} &= (\bar{x} - \sigma)T \\ &= (0.151 - 0.472) \times 222 \\ &= (-0.321) \times 222 \\ &= -71 \text{ positions.} \end{aligned}$$

$$\begin{aligned} \text{maximum} &= (\bar{x} + \sigma)T \\ &= (0.151 + 0.472) \times 222 \\ &= 0.623 \times 222 \\ &= 138 \text{ positions.} \end{aligned}$$

To find the range at a 95% confidence level:

$$\begin{aligned} \text{minimum} &= (\bar{x} - 1.96\,\sigma)T \\ &= (0.151 - 1.96 \times 0.472) \times 222 \\ &= (-0.774) \times 222 \\ &= -\ 172 \text{ positions.} \end{aligned}$$

$$\begin{aligned} \text{maximum} &= (\bar{x} + 1.96\,\sigma)T \\ &= (0.151 + 1.96 \times 0.472) \times 222 \\ &= 1.076 \times 222 \\ &= 239 \text{ positions.} \end{aligned}$$

To find the predicted mean, $\bar{X}$:

$$\begin{aligned} \bar{X} &= \bar{x}T \\ &= 0.151 \times 222 \\ &= 33.5 \text{ positions.} \end{aligned}$$

We conclude that with 68% confidence it can be said there will be an increase of from −71 (a decrease of 71) to 138 new positions as accountants (occupation 001) with manufacturing companies within the following five year period in the area surveyed.

A similar statement can be made with 95% confidence.

Since these figures are awkward to work with, it was decided to use the predicted means for reporting the results of the study. The projected mean is less meaningful than the calculated ranges. However, it is a reliable measure of the central tendencies, hence it provides an indication of the direction and magnitude of available positions in each catagory.

VT 001 103
Graduate Follow-Up, 1964.

Connecticut State Dept. of Education, Hartford
Pub Date - 65
MF AVAILABLE IN VT-ERIC SET. 38p.

*VOCATIONAL EDUCATION, HIGH SCHOOLS, TRADE AND INDUSTRIAL EDUCATION, DISTRIBUTIVE EDUCATION, VOCATIONAL AGRICULTURE, JOB PLACEMENT, WAGES, *VOCATIONAL FOLLOWUP, *GRADUATE SURVEYS, GRADUATES, TECHNICAL INSTITUTES,
Connecticut,

Graduates of programs in vocational education totaled 2,425 in 1964, with 297 in distributive education, 208 in technical institutes, 123 in vocational agriculture, and 1,797 in vocational-technical schools. Of the 1,797 who had been in vocational-technical schools, 222 continued full-time education, 173 entered the armed forces, 1,183 were employed in their trade or a related field, 132 were employed in an unrelated field, 27 were unemployed, and 60 were unaccounted for. Tabular data are given by trade, school, and sex for the number of graduates, the number continuing full-time education, the number entering the armed forces, the number available for employment, the mean hourly wage, and the number employed at a trade or related field. (EM)

VT 001 103

ED022065

1103

CONNECTICUT

CONNECTICUT STATE DEPARTMENT OF EDUCATION

Division of Vocational Education Bureau of Vocational-Technical Schools

1964

GRADUATE FOLLOW - UP

1965

VT 001103

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

CONNECTICUT STATE DEPARTMENT OF EDUCATION

Division of Vocational Education Bureau of Vocational-Technical Schools

SUMMARY OF 1964 GRADUATES

CONNECTICUT
STATE BOARD OF EDUCATION

1964-1965

William Horowitz, Chairman	New Haven
Mrs. Sylvia K. Bingham	Salem
Leo B. Flaherty, Jr.	Vernon
G. Eugene Goundrey	Middletown
Mrs. Jane D. Humphries	Norfolk
Margaret Kiely	Bridgeport
Mrs. Minnie G. Macdonald	Putnam
George D. Pratt, Jr.	Bridgewater
Sterling T. Tooker	Simsbury

William J. Sanders
Secretary and Commissioner of Education

William H. Flaharty
Assistant Secretary and Deputy Commissioner of Education

Hartford

CONNECTICUT STATE DEPARTMENT OF EDUCATION
Division of Vocational Education
Hartford

Joseph F. Murphy, Director
Richard W. Howes, Assistant Director

°

BUREAU OF VOCATIONAL SERVICES

Herbert Righthand, Chief

°

BUREAU OF VOCATIONAL TECHNICAL INSTITUTES

Lucian Lombardi, Chief

°

BUREAU OF VOCATIONAL-TECHNICAL SCHOOLS

Laurence Eddy, Chief

FOREWORD

This Graduate Follow-Up Report presents a record of our success or failure in our primary mission, the preparation of youth for entry into the "world of work". The report this year reflects not only the activities of the Trade and Industrial graduates, but also those of the Distributive Education, Technical Institute and Vocational Agriculture program graduates. In future years, as these key members of the Division experience program growth, and other programs such as Office Education and Vocational Homemaking develop, the Graduate Follow-Up Report will provide greater detail on individual school offerings and placement activity.

The report will provide the most value if each individual concerned evaluates the results of his program, school or trade and the needs of the community, state and nation.

Joseph F. Murphy
Director
Division of Vocational Education

INTRODUCTION

In 1964, programs supervised by the Division of Vocational Education of the Connecticut State Department of Education graduated 2425 young people with skills essential to the economic welfare of the state. The graduates completed secondary school level programs in Distributive Education, Vocational Agriculture, Vocational-Technical courses and post-secondary level programs in the Technical Institutes.

These graduates entered a Connecticut labor force of 1,172,000 people; sixteen per cent of this force were skilled workers. Eighty-five per cent of these graduates took employment in their specialized field of training. Thirty-five graduates (1.6%) were reported as unemployed. The unemployment figure for the state during this same period was 3.8%. The unemployment figure reported for 1964 "Public High School Graduates" by G. R. Champlin, Chief of the Bureau of Elementary and Secondary Education, on February 17, 1965, was 5.7%.

The average weekly pay check in the state, according to statistics provided by the Labor Department, for this period was $108.44. The per-capita income was $3,217.

The mean hourly wage for graduates of the programs offered by the Division of Vocational Education was $1.93. When converted into yearly income on the basis of a 40 hour week and a 50 week year, this hourly rate would equal a yearly salary of $3,860.

This group of 2425 graduates entering the labor market in their first year of employment will earn a gross income of $9,360,500.

Errol J. Terrell
Consultant in Research

TABLE OF CONTENTS

Placement Data Division Programs

Page

All Programs 2

Vocational-Technical Schools, 1955-64 Summary 4

Vocational-Technical Schools, 1955-64 Comparison 6

Placement Data by Occupations

Baker 8

Barber 8

Beauty Operator 8

Brick & Stonemason 8

Carpenter 8

Certified Dental Assistant 9

Drafting, (Aeronautical) 9

Draftsman, (Architectural) 9

Draftsman, (Mechanical) 9

Electrician 10

Food Trades Worker 11

Machinist 11

Machinist (Automatic Screw) 11

Mechanics & Repairmen

- (Airplane) 11
- (Auto Body & Fender) 12
- (Automotive) 12
- (Instrument) 12

Needle Trades 12

Nurse, Practical 13

Painter & Decorator 13

Plumber & Pipefitter 13

Printing Occupations 14

Lithographer 14

Page

Sheetmetal Worker 14

Technician (Chemical) 14

Technician (Electronics) 14

Tool & Die Maker 15

Vocational Homemaker 15

Placement Data by Schools (Alphabetically by Towns)

Bridgeport (Bullard-Havens) 17

Danbury (Henry Abbott) 18

Danielson (Harvard H. Ellis) 19

Hamden (Eli Whitney) 20

Hartford (Albert I. Prince) 21

Manchester (Howell Cheney) 22

Meriden (Horace C. Wilcox) 23

Middletown (Vinal) 24

New Britain (E. C. Goodwin) 25

Norwich (Norwich) 26

Stamford (J. M. Wright) 27

Torrington (Oliver Wolcott) 28

Waterbury (Warren F. Kaynor) 29

Willimantic (Windham) 30

Placement Data For Division Programs

- Distributive Education
- Technical Institutes
- Vocational Agriculture
- Vocational Technical Schools

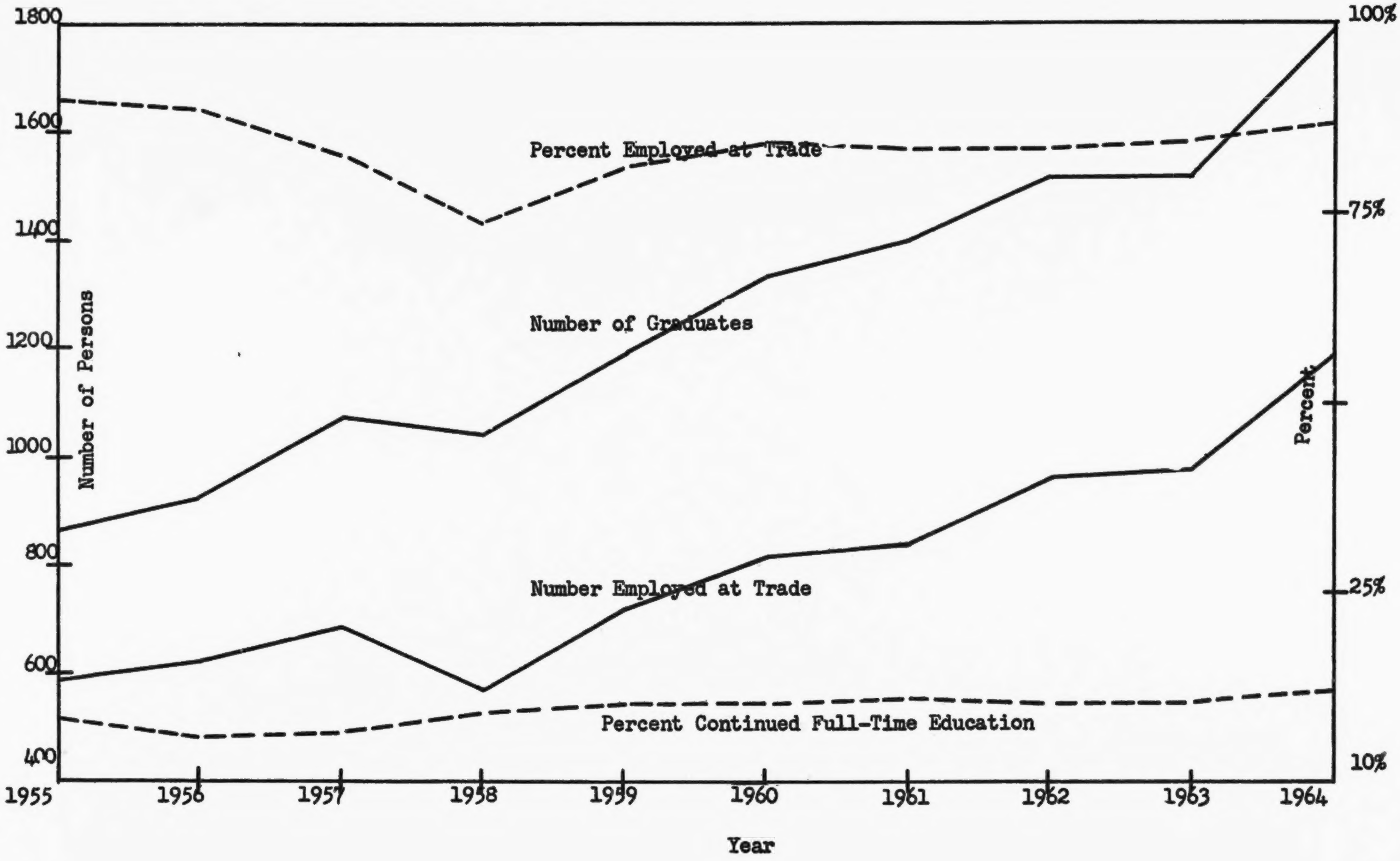
DIVISION PROGRAMS
Placement Data

(1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
							NUMBER (7)	PERCENT (8)				
Distributive Education (Male)		173	54	32	6	81	54	67	1.62	20	4	3
(Female)		124	22	0	8	94	60	64	1.62	22	4	8
TOTAL	16	297	76	32	14	175	114	65	1.62	42	8	11
Technical Institutes (Male)		208	35	10	4	159	154	97	2.65	1	0	4
(Female)		0	0	0	0	0	0	-	-	0	0	0
TOTAL	10	208	35	10	4	159	154	97	2.65	1	0	4
Vocational Agriculture (Male)		122	50	18	1	53	39	74	1.60	14	0	0
(Female)		1	1	0	0	0	0	0	0	0	0	0
TOTAL	12	123	51	18	1	53	39	74	1.60	14	0	0
Vocational-Technical Schools (Male)		1302	201	172	6	923	773	84	1.93	113	15	22
(Female)		495	21	1	27	446	410	92	1.64	19	12	5
TOTAL	150	1797	222	173	33	1369	1183	86	1.87	132	27	27
All Programs (Male)		1805	340	232	17	1216	1020	84	1.95	148	19	29
(Female)		620	44	1	35	540	470	87	1.63	41	16	13
GRAND TOTAL	188	2425	384	233	52	1756	1490	85	1.93	189	35	42

Placement Data For

Bureau Vocational - Technical Schools

TRADE AND INDUSTRIAL GRADUATES 1955 - 1964



VOCATIONAL-TECHNICAL SCHOOL GRADUATES 1955-1964

Year (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
							NUMBER (7)	PERCENT (8)				
1955		863	66	138	-	659	587	89	1.38	55	6	11
1956		918	52	154	-	712	629	88	1.58	72	4	7
1957		1071	70	169	-	832	683	82	1.64	112	12	25
1958		1047	91	191	-	765	564	74	1.48	125	54	22
1959		1196	117	192	-	886	711	80	1.60	127	15	33
1960		1323	140	215	-	968	810	84	1.64	92	29	37
1961		1399	156	216	-	1027	848	83	1.70	116	27	36
1962		1504	151	193	-	1160	967	83	1.70	130	26	37
1963		1510	155	174	9	1172	981	84	1.80	116	31	44
1964		1797	222	173	33	1369	1183	86	1.87	132	27	27

GRADUATE FOLLOW-UP COMPARISON, VOCATIONAL-TECHNICAL SCHOOLS

1955 - 1964

	1955	1964
Total Number of Graduates	863	1797
Continued Education in Full-Time School	66	222
Entered Armed Forces	138	173
Other	-	33
Available for Employment	659	1369
Employed in Trade or Related Field	587	1183
Mean Hourly Wage	1.38	1.87
Employed - Not Related to Trade	55	132
Unemployed	6	27
Unaccounted For	11	27
Estimated Gross Income (40 Hour Week, 50 Week Year)	1,684,924.80	4,424,420.00

The number of graduates has more than doubled in the period covered above.

The number of students continuing full-time education in 1964 has more than tripled the number so indicated in 1955. In percentage, this growth approximates 4%. In 1955, 7.6% continued in full-time education, while in 1964, 12% may be noted as continuing their full-time education. Not included in either years' data are the large numbers of students who continue their education in both formal and informal apprenticeship, evening supplementary, technical institute, industrial and junior college programs.

In 1955, 16% of the graduates entered the Armed Forces. In 1964, this percentage dropped to 10%, which represents the smallest percentage of graduates entering the service at any time in the 10 year span.

The percentage of graduates available for employment in both 1955 and 1964 remained constant at 76%. The percentage of graduates employed at the trade for which trained or a field related shows a decrease from 89% in 1955 to 86% in 1964. The average hourly earnings have increased as might be anticipated, in view of the trend of earnings in industry statewide.

The percentage of unemployed graduates in 1955 was less than 1%. In 1964, this figure has increased slightly to 1.5%.

Placement Data by Occupations

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
							NUMBER (7)	PERCENT (8)				
BAKER (All Male)	2	9	2	3	0	4	4	100	2.03	0	0	0
BRIDGEPORT		5	2	2	0	1	1	100	2.00	0	0	0
NEW BRITAIN		4	0	1	0	3	3	100	2.07	0	0	0
BARBER	2	35	0	2	0	33	32	97	1.62	1	0	0
(Male)		29	0	2	0	27	26	96	1.62	1	0	0
(Female)		6	0	0	0	6	6	100	1.62	0	0	0
BRIDGEPORT (Male)		15	0	0	0	15	14	93	1.50	1	0	0
(Female)		2	0	0	0	2	2	100	1.50	0	0	0
HARTFORD (Male)		14	0	2	0	12	12	100	1.75	0	0	0
(Female)		4	0	0	0	4	4	100	1.75	0	0	0
BEAUTY OPERATOR (All Female)	8	88	9	0	7	72	62	86	1.44	7	3	0
BRIDGEPORT		16	9	0	0	7	5	72	1.50	2	0	0
DANIELSON		3	0	0	1	2	2	100	1.75	0	0	0
HAMDEN		8	0	0	0	8	8	100	1.61	0	0	0
HARTFORD		11	0	0	3	8	7	88	1.25	1	0	0
MERIDEN		15	0	0	1	14	9	64	1.25	4	1	0
NEW BRITAIN		5	0	0	0	5	4	80	1.41	0	1	0
STAMFORD		25	0	0	2	23	23	100	1.38	0	0	0
WATERBURY		5	0	0	0	5	4	80	1.39	0	1	0
BRICK & STONEMASON (All Male)	3	22	4	2	0	16	8	50	2.12	7	0	1
BRIDGEPORT		8	1	0	0	7	5	72	2.25	2	0	0
HARTFORD		14	3	2	0	9	3	33	2.00	5	0	1
CARPENTER (All Male)	14	149	6	20	0	123	107	87	2.11	13	1	2
BRIDGEPORT		18	0	1	0	17	17	100	2.25	0	0	0
DANBURY		13	0	3	0	10	9	90	2.14	1	0	0
DANIELSON		5	0	0	0	5	4	80	2.08	1	0	0

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT 5 (Col. 2 minus 3 & 4) and (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE: NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE: PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
CARPENTER (Cont'd)												
HAMDEN		13	0	1	0	12	12	100	1.77	0	0	0
HARTFORD		21	2	5	0	14	10	71	2.22	2	1	1
MANCHESTER		6	1	0	0	5	5	100	2.25	0	0	0
MERIDEN		10	0	0	0	10	8	80	1.75	2	0	0
MIDDLETOWN		3	0	0	0	3	2	67	1.90	1	0	0
NEW BRITAIN		11	0	5	0	6	6	100	2.09	0	0	0
NORWICH		13	0	2	0	11	10	91	2.87	0	0	1
STAMFORD		3	0	0	0	3	3	100	2.01	0	0	0
TORRINGTON		11	0	2	0	9	8	89	2.12	1	0	0
WATERBURY		9	2	0	0	7	4	57	1.96	3	0	0
WILLIMANTIC		13	1	1	0	11	9	82	2.15	2	0	0
CERTIFIED DENTAL ASSISTANT (All Female)	1	18	1	0	0	17	14	82	1.55	2	0	1
HAMDEN		18	1	0	0	17	14	82	1.55	2	0	1
DRAFTING AERONAUTICAL (All Male)	1	5	0	0	0	5	4	80	1.75	1	0	0
DANIELSON		5	0	0	0	5	4	80	1.75	1	0	0
DRAFTSMAN ARCHITECTURAL (All Male)	4	24	2	2	0	20	16	80	2.11	3	0	1
BRIDGEPORT		13	0	1	0	12	10	83	1.70	2	0	0
DANIELSON (Male)		2	0	0	0	2	2	100	2.87	0	0	0
HAMDEN (Male)		5	2	0	0	3	2	67	2.12	0	0	1
WILLIMANTIC		4	0	1	0	3	2	67	1.78	1	0	0
DRAFTSMAN MECHANICAL	14	156	37	18	4	97	78	80	1.92	13	6	0
Male		155	37	18	4	96	77	80	1.93	13	6	0
Female		1	0	0	0	1	1	100	1.92	0	0	0

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
							NUMBER (7)	PERCENT (8)				
DRAFTSMAN MECHANICAL (Cont'd)												
BRIDGEPORT (Male)		20	6	6	0	8	7	88	1.75	1	0	0
DANBURY (Male)		13	3	1	0	9	9	100	1.81	0	0	0
DANIELSON (Male)		7	1	1	0	5	4	80	2.50	1	0	0
HAMDEN (Male)		13	1	0	1	11	10	91	1.82	1	0	0
HARTFORD (Male)		8	2	0	1	5	5	100	2.30	0	0	0
MANCHESTER (Male)		1	0	0	0	1	0	-	1.50	1	0	0
MERIDEN (Male)		11	3	4	0	4	2	50	1.75	2	0	0
MIDDLETOWN (Male)		4	1	1	0	2	2	100	1.83	0	0	0
NEW BRITAIN (Male)		12	2	0	0	10	9	90	1.96	0	1	0
NORWICH (Male)		7	1	1	0	5	3	60	1.95	2	0	0
STAMFORD (Male)		9	1	1	0	7	7	100	1.92	0	0	0
(Female)		1	0	0	0	1	1	100	1.92	0	0	0
TORRINGTON (Male)		11	3	0	0	8	7	87	2.00	0	1	0
WATERBURY (Male)		32	13	2	2	15	7	66	1.93	4	4	0
WILLIMANTIC (Male)		7	0	1	0	6	5	83	2.08	1	0	0
ELECTRICIAN (All Male)	14	190	42	25	0	123	92	75	1.88	20	4	7
BRIDGEPORT		22	5	2	0	15	14	93	1.65	0	0	1
DANBURY		16	2	2	0	12	11	92	1.85	1	0	0
DANIELSON		8	1	1	0	6	5	83	2.12	1	0	0
HAMDEN		17	3	3	0	11	9	82	1.93	1	0	1
HARTFORD		30	8	5	0	17	11	65	1.71	3	0	3
MANCHESTER		3	1	0	0	2	2	100	2.00	0	0	0
MERIDEN		7	3	1	0	3	3	100	1.85	0	0	0
MIDDLETOWN		7	0	0	0	7	5	71	1.75	1	1	0
NEW BRITAIN		8	1	0	0	7	7	100	1.53	0	0	0
NORWICH		16	8	1	0	7	5	72	1.92	1	0	1
STAMFORD		13	4	5	0	4	4	100	2.06	0	0	0
TORRINGTON		12	0	1	0	11	4	36	2.37	6	1	0
WATERBURY		16	5	3	0	8	5	63	1.57	3	0	0

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
ELECTRICIAN (Cont'd)												
WILLIMANTIC		15	1	1	0	13	7	54	1.97	3	2	1
FOOD TRADES WORKER	2	12	1	3	0	8	7	87	1.67	0	0	1
Male		9	1	3	0	5	5	100	1.84	0	0	0
Female		3	0	0	0	3	2	66	1.50	0	0	1
NEW BRITAIN (Male)		6	0	3	0	3	3	100	1.98	0	0	0
(Female)		3	0	0	0	3	2	67	1.50	0	0	1
STAMFORD (Male)		3	1	0	0	2	2	100	1.70	0	0	0
MACHINIST (All Male)	14	205	23	31	1	150	129	86	1.91	15	2	4
BRIDGEPORT		19	3	5	0	11	11	100	1.80	0	0	0
DANBURY		8	2	1	0	5	5	100	1.83	0	0	0
DANIELSON		5	1	1	0	3	3	100	1.93	0	0	0
HAMDEN		14	2	2	0	10	10	100	1.95	0	0	0
HARTFORD		24	1	2	0	21	18	86	1.90	0	2	1
MANCHESTER		11	2	4	0	5	4	80	1.75	1	0	0
MERIDEN		15	1	1	0	13	13	100	2.42	0	0	0
MIDDLETOWN		4	0	0	0	4	2	50	[illegible]	2	[illegible]	0
NEW BRITAIN		6	0	0	1	5	5	100	1.71	0	0	0
NORWICH		12	0	3	0	9	6	67	2.40	2	0	1
STAMFORD		9	2	1	0	6	6	100	1.80	0	0	0
TORRINGTON		21	1	3	0	17	16	94	1.79	1	0	0
WATERBURY		46	7	6	0	33	28	85	1.90	4	0	1
WILLIMANTIC		11	1	2	0	8	2	25	1.80	5	0	1
MACHINIST (Automatic Screw) (All Male)	1	1	0	0	0	1	1	100	2.10	0	0	0
[illegible]		1	0	0	0	1	1	100	2.10	0	0	0
[illegible] REPAIRMEN (Airplane) (All Male)	[illegible]	16	0	3	0	13	[illegible]	[illegible]	[illegible]	0	0	0

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and & (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
MECHANICS & REPAIRMEN (Cont'd)												
DANIELSON		16	0	3	0	13	13	100	2.50	0	0	0
MECHANICS & REPAIRMEN (Auto Body, Fender) (All Male)	1	4	0	0	0	4	4	100	1.59	0	0	0
WATERBURY		4	0	0	0	4	4	100	1.59	0	0	0
MECHANICS & REPAIRMEN (Automotive) (All Male)	14	146	11	18	1	116	102	88	1.82	11	2	1
BRIDGEPORT		16	0	1	0	15	14	93	1.75	0	1	0
DANBURY		8	1	1	1	5	5	100	1.72	0	0	0
DANIELSON		1	0	0	0	1	1	100	1.50	0	0	0
HAMDEN		17	5	2	0	10	9	90	1.76	1	0	0
HARTFORD		15	1	1	0	13	11	85	2.10	2	0	0
MANCHESTER		2	1	0	0	1	1	100	2.50	0	0	0
MERIDEN		5	0	0	0	5	5	100	1.65	0	0	0
MIDDLETOWN		6	0	2	0	4	3	75	1.75	1	0	0
NEW BRITAIN		15	1	1	0	13	13	100	1.85	0	0	0
NORWICH		9	0	1	0	8	7	87	1.92	0	0	1
STAMFORD		17	0	1	0	16	16	100	1.86	0	0	0
TORRINGTON		12	0	3	0	9	6	67	1.35	2	1	0
WATERBURY		14	1	4	0	9	6	67	1.94	3	0	0
WILLIMANTIC		9	1	1	0	7	5	71	1.84	2	0	0
MECHANICS & REPAIRMEN (Instrument) (All Male)	1	9	2	1	0	6	3	50	1.70	3	0	0
WATERBURY		9	2	1	0	6	3	50	1.70	3	0	0
NEEDLE TRADES (All Female) (Fashion Design)	6	56	6	0	1	49	35	72	1.36	8	4	2

BEST AVAILABLE COPY

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
[illegible] TRADES (Cont'd)												
BRIDGEPORT		11	1	0	0	10	9	90	1.30	0	1	0
HAMDEN		19	2	0	0	17	15	88	1.26	1	1	0
HARTFORD		8	0	0	1	7	4	57	1.25	1	0	2
NEW BRITAIN		8	2	0	0	6	4	67	1.68	2	0	0
NORWICH		5	0	0	0	5	0	-	1.37	3	2	0
WATERBURY		5	1	0	0	4	3	75	1.32	1	0	0
NURSE, PRACTICAL	5	318	2	1	19	296	287	97	1.93	2	5	2
Male		9	0	0	0	9	8	88	2.28	0	0	1
Female		309	2	1	19	287	279	97	1.81	2	5	1
BRIDGEPORT (Female)		58	0	0	0	58	58	100	1.75	0	0	0
HAMDEN (Female)		84	0	0	0	84	81	96	1.66	0	3	0
(Male)		1	0	0	0	1	0	-	-	0	0	1
NEW BRITAIN (Female)		119	2	1	13	103	99	96	1.71	2	2	0
NORWICH (Male)		7	0	0	0	7	7	100	2.25	0	0	0
(Female)		12	0	0	0	12	12	100	2.25	0	0	0
[illegible] (Female)		12	0	0	0	12	12	100	1.80	0	0	0
WILLIMANTIC (Female)		24	0	0	6	18	17	94	1.74	0	0	1
(Male)		1	0	0	0	1	1	100	2.35	0	0	0
PAINTER-DECORATOR (All Male)	1	4	0	0	0	4	4	100	2.00	0	0	0
BRIDGEPORT		4	0	0	0	4	4	100	2.00	0	0	0
PLUMBER & PIPE-FITTER												
(All Male)	6	39	1	5	0	33	26	79	1.99	6	0	1
BRIDGEPORT		14	1	2	0	11	10	91	2.25	0	0	1
HAMDEN		2	0	0	0	2	0	-	1.70	2	0	0
HARTFORD		3	0	0	0	3	3	100	1.92	0	0	0
NEW BRITAIN		5	0	0	0	5	4	80	2.07	1	0	0
NORWICH		12	0	3	0	9	6	67	1.75	3	0	0

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
							NUMBER (7)	PERCENT (8)				
PLUMBER & PIPE-FITTER (Cont'd)												
STAMFORD		3	0	0	0	3	3	100	2.23	0	0	0
PRINTING OCCUPATIONS	6	60	4	12	0	44	38	86	1.59	5	0	1
Male		59	3	12	0	44	38	86	1.59	5	0	1
Female		1	1	0	0	0	0	0	0	0	0	0
BRIDGEPORT		18	2	5	0	11	10	91	1.70	1	0	0
HAMDEN		16	0	2	0	14	10	71	1.53	3	0	1
HARTFORD		10	0	2	0	8	7	87	1.56	1	0	0
MERIDEN		3	1	1	0	1	1	100	1.60	0	0	0
NEW BRITAIN (Male)		4	0	2	0	2	2	100	1.75	0	0	0
(Female)		1	1	0	0	0	0	-	-	0	0	0
STAMFORD		8	0	0	0	8	8	100	1.40	0	0	0
LITHOGRAPHER (All Male)	2	8	0	2	0	6	6	100	1.90	0	0	0
HAMDEN		3	0	1	0	2	2	100	2.25	0	0	0
HARTFORD		5	0	1	0	4	4	100	1.56	0	0	0
SHEET METAL WORKER (All Male)	3	13	0	1	0	12	11	92	1.99	1	0	0
MERIDEN		3	0	1	0	2	2	100	2.30	0	0	0
NORWICH		7	0	0	0	7	6	86	1.75	1	0	0
STAMFORD		3	0	0	0	3	3	100	1.92	0	0	0
TECHNICIAN (Chemical)	1	12	5	1	0	6	6	100	1.93	0	0	0
Male		10	4	1	0	5	5	100	1.93	0	0	0
Female		2	1	0	0	1	1	100	1.93	0	0	0
STAMFORD (Male)		10	4	1	0	5	5	100	1.93	0	0	0
(Female)		2	1	0	0	1	1	100	1.93	0	0	0
TECHNICIAN (Electronics) (All Male)	10	115	49	15	0	51	36	70	1.95	13	0	2

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
							NUMBER (7)	PERCENT (8)				
TECHNICIAN (Electronics) (Cont'd)												
BRIDGEPORT		28	18	1	0	9	8	89	2.00	1	0	0
DANBURY		13	5	2	0	6	6	100	1.62	0	0	0
DANIELSON		6	1	3	0	2	1	50	2.10	1	0	0
HAMDEN		10	8	1	0	1	1	100	2.00	0	0	0
HARTFORD		23	5	5	0	13	4	31	1.95	8	0	1
MERIDEN		11	5	2	0	4	3	75	2.00	1	0	0
MIDDLETOWN		4	1	1	0	2	2	100	1.96	0	0	0
NEW BRITAIN		7	4	0	0	3	2	67	2.00	0	0	1
STAMFORD		8	1	0	0	7	7	100	2.12	0	0	0
WILLIMANTIC		5	1	0	0	4	2	50	1.78	2	0	0
TOOL & DIE MAKER (All Male)	9	72	14	8	0	50	48	98	2.04	1	0	1
BRIDGEPORT		4	0	0	0	4	4	100	2.25	0	0	0
DANIELSON		12	1	1	0	10	9	90	2.19	1	0	0
HAMDEN		9	5	0	0	4	3	75	2.05	0	0	1
MANCHESTER		2	0	1	0	1	1	100	1.82	0	0	0
MERIDEN		12	3	1	0	8	8	100	2.27	0	0	0
MIDDLETOWN		3	1	0	0	2	2	100	1.95	0	0	0
NEW BRITAIN		18	2	5	0	11	11	100	1.90	0	0	0
STAMFORD		9	1	0	0	8	8	100	1.90	0	0	0
WATERBURY		3	1	0	0	2	2	100	1.85	0	0	0
VOCATIONAL HOMEMAKER (All Female)	3	11	1	0	0	10	10	100	1.35	0	0	0
BRIDGEPORT		1	0	0	0	1	1	100	1.25	0	0	0
DANIELSON		5	1	0	0	4	4	100	1.50	0	0	0
STAMFORD		5	0	0	0	5	5	100	1.29	0	0	0

Placement Data by Schools

TRADE and SCHOOL BULLARD-HAVENS REGIONAL VOCATIONAL TECHNICAL SCHOOL 500 Palisades Avenue Bridgeport, Connecticut	NUMBER OF COURSES	TOTAL NUMBER OF GRADUATES CLASS OF 1964	CONTINUED TRAINING IN FULL-TIME SCHOOL	ENTERED ARMED SERVICE	OTHER	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE	UNEMPLOYED	UNACCOUNTED FOR
							NUMBER	PERCENT				
(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Baker		5	2	2	0	1	1	100	2.00	0	0	0
Barber		15	0	0	0	15	14	93	1.50	1	0	0
*Barber		2	0	0	0	2	2	100	1.50	0	0	0
*Beauty Operator		16	9	0	0	7	5	72	1.50	2	0	0
Brick & Stonemason		8	1	0	0	7	5	72	2.25	2	0	0
Carpenter		18	0	1	0	17	17	100	2.25	0	0	0
Draftsman, Architectural		13	0	1	0	12	10	83	1.70	2	0	0
Draftsman, Mechanical		20	6	6	0	8	7	88	1.75	1	0	0
Electrician		22	5	2	0	15	14	93	1.65	0	0	1
Machinist		19	3	5	0	11	11	100	1.80	0	0	0
Mechanics & Repairmen (Auto)		16	0	1	0	15	14	93	1.75	0	1	0
*Needle Trades (Fashion Design)		11	1	0	0	10	9	90	1.30	0	1	0
*Nurse, Practical		58	0	0	0	58	58	100	1.75	0	0	0
Painter-Decorator		4	0	0	0	4	4	100	2.00	0	0	0
Plumber & Pipefitter		14	1	2	0	11	10	91	2.25	0	0	1
Printing Occupations		18	2	5	0	11	10	91	1.70	1	0	0
Technician (Electronics)		28	18	1	0	9	8	89	2.00	1	0	0
Tool & Die Maker		4	0	0	0	4	4	100	2.25	0	0	0
*Vocational Homemaker		1	0	0	0	1	1	100	1.25	0	0	0
ALL TRADES		292	48	26	0	218	204	94	1.80	10	2	2
Male		204	38	26	0	140	129	92	1.92	8	1	2
*Female		88	10	0	0	78	75	96	1.46	2	1	0

TRADE and SCHOOL HENRY ABBOTT REGIONAL VOCATIONAL TECHNICAL SCHOOL Hayestown Road Danbury, Connecticut (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
Carpenter		13	0	3	0	10	9	90	2.14	1	0	0
Draftsman, Mechanical		13	3	1	0	9	9	100	1.81	0	0	0
Electrician		16	2	2	0	12	11	92	1.85	1	0	0
Machinist		8	2	1	0	5	5	100	1.83	0	0	0
Mechanics & Repairmen (Auto)		8	1	1	1	5	5	100	1.72	0	0	0
Technician, Electronics		13	5	2	0	6	6	100	1.62	0	0	0
ALL TRADES (All Male)		71	13	10	1	47	45	96	1.83	2	0	0

TRADE and SCHOOL H. H. ELLIS REGIONAL VOCATIONAL TECHNICAL SCHOOL Maple Avenue Danielson, Connecticut (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
*Beauty Operator		3	0	0	1	2	2	100	1.75	0	0	0
Carpentry & Building Construction		5	0	0	0	5	4	80	2.08	1	0	0
Draftsman, Aeronautical		5	0	0	0	5	4	80	1.75	1	0	0
Draftsman, Architectural		2	0	0	0	2	2	100	2.87	0	0	0
Draftsman, Mechanical		7	1	1	0	5	4	80	2.50	1	0	0
Electrician		8	1	1	0	6	5	83	2.12	1	0	0
Electronics		6	1	3	0	2	1	50	2.10	1	0	0
Machinist		5	1	1	0	3	3	100	1.93	0	0	0
Mechanics & Repairmen (Airplane)		16	0	3	0	13	13	100	2.50	0	0	0
Mechanics & Repairmen (Auto)		1	0	0	0	1	1	100	1.50	0	0	0
Tool & Die Maker		12	1	1	0	10	9	90	2.19	1	0	0
*Vocational Homemaker		5	1	0	0	4	4	100	1.50	0	0	0
ALL TRADES		75	6	10	1	58	52	90	2.07	6	0	0
Male		67	5	10	0	52	46	88	2.15	6	0	0
*Female		8	1	0	1	6	6	100	1.63	0	0	0

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
ELI WHITNEY REGIONAL VOCATIONAL TECHNICAL SCHOOL Jones Road Hamden, Connecticut												
*Beauty Operator		8	0	0	0	8	8	100	1.61	0	0	0
Carpenter		13	0	1	0	12	12	100	1.77	0	0	0
*Certified Dental Assistant		18	1	0	0	17	14	82	1.55	2	0	1
Draftsman, Architectural		5	2	0	0	3	2	67	2.12	0	0	1
Draftsman, Mechanical		13	1	0	1	11	10	91	1.82	1	0	0
Electrician		17	3	3	0	11	9	82	1.93	1	0	1
Machinist		14	2	2	0	10	10	100	1.95	0	0	0
Mechanics & Repairmen (Auto)		17	5	2	0	10	9	90	1.76	1	0	0
*Needle Trades (Fashion Design)		19	2	0	0	17	15	88	1.26	1	1	0
Nurse, Practical (Male)		1	0	0	0	1	0	-	-	0	0	1
*(Female)		84	0	0	0	84	81	96	1.66	0	3	0
Plumber & Pipefitter		2	0	0	0	2	0	-	1.70	2	0	0
Printing Occupations		16	0	2	0	14	10	71	1.53	3	0	1
Lithographer		3	0	1	0	2	2	100	2.25	0	0	0
Technician (Electronics)		10	8	1	0	1	1	100	2.00	0	0	0
Tool & Die Maker		9	5	0	0	4	3	75	2.05	0	0	1
ALL TRADES		249	29	12	1	207	186	90	1.80	11	4	6
Male		120	26	12	1	81	68	84	1.90	8	0	5
*Female		129	3	0	0	126	118	94	1.52	3	4	1

TRADE and SCHOOL							EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE					
ALBERT I. PRINCE REGIONAL VOCATIONAL TECHNICAL SCHOOL 500 Brookfield Street Hartford, Connecticut (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	NUMBER (7)	PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
Barber		14	0	2	0	12	12	100	1.75	0	0	0
*Barber		4	0	0	0	4	4	100	1.75	0	0	0
*Beauty Operator		11	0	0	3	8	7	88	1.25	1	0	0
Carpenter		21	2	5	0	14	10	71	2.22	2	1	1
Draftsman, Mechanical		8	2	0	1	5	5	100	2.30	0	0	0
Electrician		30	8	5	0	17	11	65	1.71	3	0	3
Lithography		5	0	1	0	4	4	100	1.56	0	0	0
Machinist		24	1	2	0	21	18	86	1.90	0	2	1
Masonry		14	3	2	0	9	3	33	2.00	5	0	1
Mechanics & Repairmen (Auto)		15	1	1	0	13	11	85	2.10	2	0	0
*Needle Trades (Fashion Design)		8	0	0	1	7	4	57	1.25	1	0	2
Plumber & Pipefitter		3	0	0	0	3	3	100	1.92	0	0	0
Printing Occupations		10	0	2	0	8	7	87	1.56	1	0	0
Technician (Electronics)		23	5	5	0	13	4	31	1.95	8	0	1
ALL TRADES		190	22	25	5	138	103	77	1.79	23	3	9
Male		167	22	25	1	119	88	77	1.90	21	3	7
*Female		23	0	0	4	19	15	79	1.42	2	0	2

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
							NUMBER (7)	PERCENT (8)				
HOWELL CHENEY REGIONAL VOCATIONAL TECHNICAL SCHOOL Tolland Turnpike Manchester, Connecticut												
Carpenter		6	1	0	0	5	5	100	2.25	0	0	0
Draftsman, Mechanical		1	0	0	0	1	0	-	1.50	1	0	0
Electrician		3	1	0	0	2	2	100	2.00	0	0	0
Machinist		11	2	4	0	5	4	80	1.75	1	0	0
Mechanics & Repairman (Auto)		2	1	0	0	1	1	100	2.50	0	0	0
Tool & Die Maker		2	0	1	0	1	1	100	1.82	0	0	0
ALL TRADES (All Males)		25	5	5	0	15	13	87	1.97	2	0	0

TRADE and SCHOOL HORACE C. WILCOX REGIONAL VOCATIONAL TECHNICAL SCHOOE Oregon Road Meriden, Connecticut (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL–TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
							NUMBER (7)	PERCENT (8)				
*Beauty Operator		15	0	0	1	14	9	64	1.25	4	1	0
Carpenter		10	0	0	0	10	8	80	1.75	2	0	0
Draftsman, Mechanical		11	3	4	0	4	2	50	1.75	2	0	0
Electrician		7	3	1	0	3	3	100	1.85	0	0	0
Industrial Electronics		11	5	2	0	4	3	75	2.00	1	0	0
Machinist		15	1	1	0	13	13	100	2.42	0	0	0
Mechanics & Repairmen (auto)		5	0	0	0	5	5	100	1.65	0	0	0
Printing Occupations		3	1	1	0	1	1	100	1.60	0	0	0
Tool & Die Maker		12	3	1	0	8	8	100	2.27	0	0	0
Sheet Metal		3	0	1	0	2	2	100	2.30	0	0	0
ALL TRADES		92	16	11	1	67	54	84	1.88	9	1	0
Male		77	16	11	0	50	45	90	1.95	5	0	0
*Female		15	0	0	1	14	9	64	1.25	4	1	0

TRADE and SCHOOL VINAL REGIONAL VOCATIONAL TECHNICAL SCHOOL 60 Daniels Street Middletown, Connecticut (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
							NUMBER (7)	PERCENT (8)				
Carpenter		3	0	0	0	3	2	67	1.90	1	0	0
Draftsman, Mechanical		4	1	1	0	2	2	100	1.83	0	0	0
Electrician		7	0	0	0	7	5	71	1.75	1	1	0
Industrial Electronics		4	1	1	0	2	2	100	1.96	0	0	0
Machinist		4	0	0	0	4	2	50	1.80	2	0	0
Mechanics & Repairmen (Auto)		6	0	2	0	4	3	75	1.75	1	0	0
Tool & Die Maker		3	1	0	0	2	2	100	1.95	0	0	0
ALL TRADES (All Male)		31	3	4	0	24	18	75	1.85	5	1	0

TRADE and SCHOOL E. C. GOODWIN REGIONAL VOCATIONAL TECHNICAL SCHOOL 735 Slater Road New Britain, Connecticut (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
Baker		4	0	1	0	3	3	100	2.07	0	0	0
*Beauty Operator		5	0	0	0	5	4	80	1.41	0	1	0
Carpenter		11	0	5	0	6	6	100	2.09	0	0	0
Draftsman, Mechanical		12	2	0	0	10	9	90	1.96	0	1	0
Electrician		8	1	0	0	7	7	100	1.53	0	0	0
Electronics, Industrial		7	4	0	0	3	2	67	2.00	0	0	1
Food Trades Worker (Male)		6	0	3	0	3	3	100	1.98	0	0	0
*(Female)		3	0	0	0	3	2	67	1.50	0	0	1
Machinist		6	0	0	1	5	5	100	1.74	0	0	0
Machinist (Automatic Screw)		1	0	0	0	1	1	100	2.10	0	0	0
Mechanics & Repairmen (Auto)		15	1	1	0	13	13	100	1.85	0	0	0
Needle Trades (Fashion Design)		8	2	0	0	6	4	67	1.68	2	0	0
*Nurse, Practical		119	2	1	13	103	99	96	1.71	2	2	0
Plumber & Pipefitter		5	0	0	0	5	4	80	2.07	1	0	0
Printing Occupations (Male)		4	0	2	0	2	2	100	1.75	0	0	0
*(Female)		1	1	0	0	0	0	-	-	0	0	0
Tool & Diemaker		18	2	5	0	11	11	100	1.90	0	0	0
ALL TRADES		233	15	18	14	186	175	94	1.83	5	4	2
Male		97	10	17	1	69	66	96	1.92	1	1	1
*Female		136	5	1	13	117	109	93	1.57	4	3	1

TRADE and SCHOOL NORWICH REGIONAL VOCATIONAL TECHNICAL SCHOOL 590 New London Turnpike Norwich, Connecticut (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
Carpenter		13	0	2	0	11	10	91	2.75	0	0	1
Draftsman, Mechanical		7	1	1	0	5	3	60	1.95	2	0	0
Electrician		16	8	1	0	7	5	72	1.92	1	0	1
Licensed Practical Nurse (Male)		7	0	0	0	7	7	100	2.25	0	0	0
*(Female)		12	0	0	0	12	12	100	2.25	0	0	0
Machinist		12	0	3	0	9	6	67	2.40	2	0	1
Mechanics & Repairmen (Auto)		9	0	1	0	8	7	87	1.92	0	0	1
*Needle Trades (Fashion Design)		5	0	0	0	5	0	-	1.37	3	2	0
Plumber & Pipefitter		12	0	3	0	9	6	67	1.75	3	0	0
Sheetmetal		7	0	0	0	7	6	86	1.75	1	0	0
ALL TRADES		100	9	11	0	80	62	77	2.03	12	2	4
Male		83	9	11	0	63	50	79	2.09	9	0	4
*Female		17	0	0	0	17	12	71	1.81	3	2	0

J. M. WRIGHT REGIONAL VOCATIONAL TECHNICAL SCHOOL Woodside Park Stamford, Connecticut	NUMBER OF COURSES	TOTAL NUMBER OF GRADUATES CLASS OF 1964	CONTINUED TRAINING IN FULL-TIME SCHOOL	ENTERED ARMED SERVICE	OTHER	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE		MEAN HOURLY WAGE	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE	UNEMPLOYED	UNACCOUNTED FOR
							NUMBER	PERCENT				
(1)	(1a)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
*Beauty Operator		25	0	0	2	23	23	100	1.38	0	0	0
Carpenter		3	0	0	0	3	3	100	2.01	0	0	0
Draftsman, Mechanical (Male)		9	1	1	0	7	7	100	1.92	0	0	0
*(Female)		1	0	0	0	1	1	100	1.92	0	0	0
Electrician		13	4	5	0	4	4	100	2.06	0	0	0
Food Trades Worker		3	1	0	0	2	2	100	1.70	0	0	0
*Licensed Practical Nurse		12	0	0	0	12	12	100	1.80	0	0	0
Machinist		9	2	1	0	6	6	100	1.80	0	0	0
Mechanics & Repairmen (Auto)		17	0	1	0	16	16	100	1.86	0	0	0
Plumber & Pipefitter		3	0	0	0	3	3	100	2.23	0	0	0
Printing Occupations		8	0	0	0	8	8	100	1.40	0	0	0
Sheet Metal Worker		3	0	0	0	3	3	100	1.92	0	0	0
Technician (Chemical) (Male)		10	4	1	0	5	5	100	1.93	0	0	0
*(Female)		2	1	0	0	1	1	100	1.93	0	0	0
Technician (Electronics)		8	1	0	0	7	7	100	2.12	0	0	0
Tool & Die Maker		9	1	0	0	8	8	100	1.90	0	0	0
*Vocational Homemaker		5	0	0	0	5	5	100	1.29	0	0	0
ALL TRADES		140	15	9	2	114	114	100	1.83	0	0	0
Male		95	14	9	0	72	72	100	1.90	0	0	0
*Female		45	1	0	2	42	42	100	1.66	0	0	0

TRADE and SCHOOL OLIVER WOLCOTT REGIONAL VOCATIONAL TECHNICAL SCHOOL 75 Oliver Street Torrington, Connecticut (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
Carpenter		11	0	2	0	9	8	89	2.12	1	0	0
Draftsman, Mechanical		11	3	0	0	8	7	87	2.00	0	1	0
Electrician		12	0	1	0	11	4	36	2.37	6	1	0
Machinist		21	1	3	0	17	16	94	1.79	1	0	0
Mechanics & Repairmen (Auto)		12	0	3	0	9	6	67	1.35	2	1	0
ALL TRADES (All Males)		67	4	9	0	54	41	76	1.93	10	3	0

TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE: NUMBER (7)	EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE: PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
WARREN F. KAYNOR REGIONAL VOCATIONAL TECHNICAL SCHOOL 43 Tompkins Street Waterbury, Connecticut												
*Beauty Operator		5	0	0	0	5	4	80	1.39	0	1	0
Carpenter		9	2	0	0	7	4	57	1.96	3	0	0
Draftsman, Mechanical		32	13	2	2	15	7	66	1.93	4	4	0
Electrician		16	5	3	0	8	5	63	1.57	3	0	0
Machinist		46	7	6	0	33	28	85	1.90	4	0	1
Mechanics & Repairmen (Auto Body)		4	0	0	0	4	4	100	1.59	0	0	0
Mechanics & Repairmen (Auto)		14	1	4	0	9	6	67	1.94	3	0	0
Mechanics & Repairmen (Instrument)		9	2	1	0	6	3	50	1.70	3	0	0
*Needle Trades (Fashion Design)		5	1	0	0	4	3	75	1.32	1	0	0
Tool & Die Maker		3	1	0	0	2	2	100	1.85	0	0	0
ALL TRADES		143	32	16	2	93	66	71	1.71	21	5	1
Male		133	31	16	2	84	59	70	1.80	20	4	1
*Female		10	1	0	0	9	7	78	1.35	1	1	0

						EMPLOYED IN TRADE FOR WHICH TRAINED OR IN OCCUPATION RELATED TO TRADE					
TRADE and SCHOOL (1)	NUMBER OF COURSES (1a)	TOTAL NUMBER OF GRADUATES CLASS OF 1964 (2)	CONTINUED TRAINING IN FULL-TIME SCHOOL (3)	ENTERED ARMED SERVICE (4)	OTHER (5)	AVAILABLE FOR EMPLOYMENT (Col. 2 minus 3 & 4) and 5 (Col. 7 plus 10 to 12) (6)	NUMBER (7)	PERCENT (8)	MEAN HOURLY WAGE (9)	EMPLOYED IN OCCUPATION NOT RELATED TO TRADE (10)	UNEMPLOYED (11)	UNACCOUNTED FOR (12)
WINDHAM REGIONAL VOCATIONAL TECHNICAL SCHOOL 210 Birch Street Willimantic, Connecticut												
Carpenter		13	1	1	0	11	9	82	2.15	2	0	0
Draftsman, Architectural		4	0	1	0	3	2	67	1.78	1	0	0
Draftsman, Mechanical		7	0	1	0	6	5	83	2.08	1	0	0
Electrician		15	1	1	0	13	7	54	1.97	3	2	1
Machinist		11	1	2	0	8	2	25	1.80	5	0	1
Mechanics & Repairmen (Auto)		9	1	1	0	7	5	71	1.84	2	0	0
Nurse, Practical (Male)		1	0	0	0	1	1	100	2.35	0	0	0
*(Female)		24	0	0	6	18	17	94	1.74	0	0	1
Technician (Electronics)		5	1	0	0	4	2	50	1.78	2	0	0
ALL TRADES		89	5	7	6	71	50	70	1.94	16	2	3
Male		65	5	7	0	53	33	62	1.97	16	2	2
*Female		24	0	0	6	18	17	94	1.74	0	0	1

VT 001 120
Agricultural Technology, Agricultural Equipment.

North Carolina State Board of Education, Raleigh
Pub Date - 1Feb66
MF AVAILABLE IN VT-ERIC SET. 17p.

*AGRICULTURAL EDUCATION, *AGRICULTURAL MACHINERY, *CURRICULUM, *TECHNICAL EDUCATION, *COURSE DESCRIPTIONS,

A 2-year curriculum designed to assist students in acquiring competencies needed in the agricultural equipment field is described. Specific curriculum objectives, descriptions, and career opportunities are given. The suggested curriculum includes courses in grammar, technical mathematics, technical drafting, physics, tractor engines, tractor hydraulic systems, report writing, welding, farm machinery, oral communication, diesels, tractor systems, sales development, soils and irrigation, business management, parts and service management, and crop processing and handling equipment.

Required courses and several electives are described. The Agricultural Equipment Technology State Advisory Committee's involvement in the design of the curriculum is discussed, and the membership is listed. (JM)

VT 001 120

VT 01120

AGRICULTURAL TECHNOLOGY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED022065

AGRICULTURAL EQUIPMENT

INTRODUCTION

Purpose of Curriculum

Manufacturing, distributing, selling, servicing and repairing agricultural equipment offer challenging opportunities in today's mechanized agriculture.

General adoption and widespread use of modern machinery has created numerous employment opportunities in production, manufacturing, sales, service, finance, distribution, installation, and maintenance of agricultural equipment.

The curriculum in Agricultural Equipment is designed to help students acquire knowledge, understandings and abilities needed in the agricultural equipment field. Related subjects are included to give the student a broad practical educational base.

The Agricultural Equipment Technology Curriculum shall develop:

1. Ability to select, demonstrate, install, and maintain agricultural equipment.
2. Initiative, judgment, and dependability.
3. Understanding of the importance of and ability to utilize technical bulletins and manuals relative to the agricultural equipment industry.
4. Ability to communicate effectively and to deal with individual human behavior problems peculiar to the agricultural equipment industry.
5. Understanding of the principles of general business organization, management and procedures relating to the agricultural equipment industry and selected areas of agricultural economics applicable to the industry.
6. Ability to utilize the knowledge and skills acquired in solving problems of the agricultural equipment industry.

VT001120

Job Description

For each agricultural engineer employed in the agricultural equipment industry, an estimated average of seven technically trained men are needed. Their duties are to assist in development and design or to insure proper service and maintenance of agricultural equipment.

Wholesale and retail distributors of agricultural machinery and equipment especially need sales and service personnel who can plan, estimate cost, and supervise technical equipment and machinery procurement, installation, maintenance and repair.

Graduates of this curriculum will be in demand by manufacturers, distributors and service firms for such equipment items as sprayers, pumps, fuels and lubricants, livestock equipment, and farm building supplies in addition to farm machinery sales and service.

ACKNOWLEDGMENTS

The Department of Community Colleges recognizes the valuable contributions of members of the staff of Wilson Technical Institute in revising this curriculum.

AGRICULTURAL TECHNOLOGY

AGRICULTURAL EQUIPMENT

SUGGESTED CURRICULUM BY QUARTERS

(Old No.)	FIRST QUARTER	Course Title	Hours Per Week Class	Hours Per Week Lab.	Quarter Hours Credit
X	T-ENG 101	Grammar	3	0	3
MA 301	T-MAT 101	Technical Mathematics	5	0	5
DD 301	T-DFT 101	Technical Drafting	0	6*	2
PHY 301	T-PHY 101	Physics: Properties of Matter	3	2	4
AG 356	T-AGR 111	Tractor Engines I	4	2	5
			15	10	19

(Old No.)	SECOND QUARTER	Course Title	Class	Lab.	Credit
X	T-ENG 102	Composition	3	0	3
DD 302	T-DFT 102	Technical Drafting	0	6*	2
PHY 302	T-PHY 102	Physics: Work, Energy, Power	3	2	4
AG 358	T-AGR 112	Tractor Engines II	4	2	5
AG 359	T-AGR 115	Tractor Hydraulic Systems	3	2	4
			13	12	18

(Old No.)	THIRD QUARTER	Course Title	Class	Lab.	Credit
ENG 303	T-ENG 103	Report Writing	3	0	3
PHY 303	T-PHY 103	Physics: Electricity	3	2	4
AG 360	T-AGR 113	Tractor Engines III	4	2	5
AG 361	T-AGR 116	Applied Hydraulics	1	2	2
AG 364	T-AGR 119	Techniques of Welding	1	2	2
AG 338	T-AGR 214	Farm Machinery I	2	4	4
			14	12	20

---

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

(Old No.)		Course Title	Hours Per Week Class	Hours Per Week Lab.	Quarter Hours Credit
	FOURTH QUARTER				
ENG 307	T-ENG 204	Oral Communication	3	0	3
AG 340	T-AGR 215	Farm Machinery II	2	4	4
AG 330	T-AGR 211	Agricultural Diesels I	4	2	5
AG 362	T-AGR 210	Tractor Systems	2	4	4
BUS 317	T-BUS 232	Sales Development	3	0	3
			14	10	19
	FIFTH QUARTER				
AG 491	T-AGR 186	Soils and Irrigation	3	2	4
AG 332	T-AGR 212	Agricultural Diesels II	2	4	4
BUS 335	T-BUS 235	Business Management	3	0	3
________	________	Social Science Elective	3	0	3
________	________	Elective ______________________	0	0	3
			11	6	17
	SIXTH QUARTER				
AG 366	T-AGR 220	Parts and Service Management	3	2	4
AG 368	T-AGR 216	Crop Processing and Handling Equipment	3	2	4
________	________	Social Science Elective	3	0	3
________	________	Elective ______________________	0	0	4
			9	4	15

Local institutions may add work experience to this curriculum.

Total Hours in Courses	101
Electives	7
Total	108

AGRICULTURAL TECHNOLOGY

AGRICULTURAL EQUIPMENT

COURSE DESCRIPTIONS BY QUARTERS

(Old No.)	Course Title FIRST QUARTER	Hours Per Week Class	 Lab.	Quarter Hours Credit
X	T-ENG 101 Grammar	3	0	3

Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life.
Prerequisite: None.

MA 301	T-MAT 101 Technical Mathematics	5	0	5

The real number system is developed as an extension of natural numbers. Number systems of various bases are introduced. Fundamental algebraic operations, the rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed.
Prerequisite: Satisfactory evidence that admission requirements have been met.

DD 301	T-DFT 101 Technical Drafting	0	6*	2

The field of drafting is introduced as the student begins study of drawing principles and practices for print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning. The principles of isometric, oblique, and perspective are introduced.
Prerequisite: None.

PHY 301	T-PHY 101 Physics: Properties of Matter	3	2	4

A fundamental course covering several basic principles of physics. The divisions included are solids and their characteristics, liquids at rest and in motion, gas laws and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course.
Prerequisite: None.

AG 356 T-AGR 111 Tractor Engines I 4 2 5

Tractor engine fundamentals. Principles of engine operation, including horsepower calculations, efficiency, combustion theory, types of engines, cylinder and valve arrangements, lubrication, fuel and cooling systems. Laboratory work consisting of demonstrations, disassembly, inspection and reassembly of various engines.
Prerequisite: None.

SECOND QUARTER

X T-ENG 102 Composition 3 0 3

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition.
Prerequisite: T-ENG 101.

DD 302 T-DFT 102 Technical Drafting 0 6* 2

The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions will be studied. Most important is the introduction of the graphical analysis of space problems. Problems of practical design elements involving points, lines, planes, and a combination of these elements shall be studied. Dimensioning practices for "details" and "working drawings," approved by the American Standards Association will also be included. Introduction is given to intersections and developments of various types of geometrical objects.
Prerequisite: T-DFT 101.

PHY 302 T-PHY 102 Physics: Work, Energy, Power 3 2 4

Major areas covered in this course are work, energy, and power. Instruction includes such topics as statics, forces, center of gravity and dynamics. Units of measurement and their applications are a vital part of this course. A practical approach is used in teaching students the use of essential mathematical formulas.
Prerequisites: T-MAT 101, T-PHY 101.

AG 358 T-AGR 112 Tractor Engines II 4 2 5

A study of tractor electrical systems, lubrication systems and lubricants.
Prerequisite: T-AGR 111.

AG 359 T-AGR 115 Tractor Hydraulic Systems 3 2 4

The principles of hydraulics and their application to farm machinery. Components of tractor hydraulic systems, testing, maintenance and repair of hydraulic systems.
Prerequisite: None.

THIRD QUARTER

ENG 303 T-ENG 103 Report Writing 3 0 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum.
Prerequisite: T-ENG 102.

PHY 303 T-PHY 103 Physics: Electricity 3 2 4

Basic theories of electricity, types of electricity, methods of production, and transmission and transforming of electricity. Electron theory, electricity by chemical action, electricity by friction, electricity by magnetism, induction voltage, amperage, resistance, horsepower, wattage, and transformers are major parts of the course.
Prerequisites: T-MAT 101, T-PHY 101.

AG 360 T-AGR 113 Tractor Engines III 4 2 5

Theoretical and practical study in correlating previous instruction by putting into practice engine operation, tuning and adjusting, including troubleshooting. This is performed in conjunction with the latest diagnostic equipment.
Prerequisites: T-AGR 111, T-AGR 112.

AG 361 T-AGR 116 Applied Hydraulics 1 2 2

A specialized study of tractor hydraulic systems with emphasis on demonstration, testing, maintenance, and repair of various systems. Class, laboratory, and field study of systems.
Prerequisite: T-AGR 115.

AG 364 T-AGR 119 Techniques of Welding 1 2 2

Principles of oxyacetylene and electrical welding, cutting and brazing. Principles, procedures, safety precautions and experience in using oxyacetylene and arc equipment. Projects are assigned to develop skill in the use of equipment. Includes the study of metals, rods, gases and special electric welding machinery.
Prerequisite: None.

AG 338 T-AGR 214 Farm Machinery I 2 4 4

A study of the operating principles of simple farm implements. The selection, field operation, maintenance and repair of basic farm machinery such as plows, disks, harrows, and cultivators. Includes principles of design and mechanics, power supply, hitching, and economics of farm machinery use.
Prerequisite: None.

FOURTH QUARTER

ENG 307 T-ENG 204 Oral Communication 3 0 3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews.
Prerequisite: T-ENG 101.

AG 340 T-AGR 215 Farm Machinery II 2 4 4

Care, repair, and selection of the larger units of farm equipment. Operating principles of self-propelled and tractor-drawn equipment will be studied in the classroom and the field. Such equipment as balers, combines, corn pickers, cotton pickers and peanut harvesters will be included.
Prerequisite: T-AGR 214.

AG 330 T-AGR 211 Agricultural Diesels I 4 2 5

Basic agricultural diesel engine principles, engine structure study, relationship of parts, exhaust systems, and thermodynamics of combustion. Although the course will be primarily a study of all diesel engines, emphasis will be placed on those particular points of interest pertaining to farm diesels.
Prerequisites: T-AGR 111, T-AGR 112, T-AGR 113.

AG 362 T-AGR 210 Tractor Systems 2 4 4

A comprehensive study of present-day automatic transmission, braking, and steering systems which are found on tractors.
Prerequisites: T-AGR 111, T-AGR 112.

BUS 317 T-BUS 232 Sales Development 3 0 3

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required.
Prerequisite: None.

FIFTH QUARTER

AG 491 T-AGR 186 Soils and Irrigation 3 2 4

A review of the fundamental soil science principles with emphasis on those principles pertaining to the water relationships in the soil. A comprehensive study of irrigation systems—components, design, selection, operation, maintenance, repair, and sales.
Prerequisite: None.

AG 332 T-AGR 212 Agricultural Diesels II 2 4 4

Disassembly and reassembly of laboratory engines that would include the inspection, diagnosis, repair, and final assembly of these engines. Engines are to be run-in on a dynamometer. Includes a study of diesel fuel systems.
Prerequisite: T-AGR 211.

BUS 335 T-BUS 235 Business Management 3 0 3

Principles of business management including overview of major functions of management such as planning, staffing, controlling, directing, and financing. Clarification of the decision-making function versus the operating function. Role of management in business--qualifications and requirements.
Prerequisite: None.

SIXTH QUARTER

AG 366 T-AGR 220 Parts and Service Management 3 2 4

A study of the principles, practices, and procedures in the efficient and profitable operation of the parts and service departments of a farm equipment retail business.
Prerequisites: T-AGR 111, T-AGR 112.

AG 368 T-AGR 216 Crop Processing and Handling Equipment 3 2 4

A study of crop processing and handling equipment including drying and storage, materials handling, feed processing, tobacco harvesting and curing, cleaning and treating seeds, and farm transport equipment.
Prerequisite: None.

ELECTIVES

An appropriate list of electives for this curriculum is shown from which the institution may select courses to complete the program of study. The institution has the prerogative to develop new courses for the electives or to modify courses from the suggested list to fulfill the local objectives. It is suggested, however, that technical courses be appropriate to the major area of study; that they not change or alter the major objectives of the program nor create a false impression of proficiency in an area either related or foreign to the major.

Elective courses must be selected from an associate degree course or new courses should be developed at a comparable level. The institution may elect to require certain courses or may let the student select an appropriate course.

AGRICULTURAL EQUIPMENT

AG 316 T-AGR 206 Agricultural Finance 3 0 3

Analysis of the capital structure of modern commercial agriculture with emphasis on the sources of credit. A review of lending institutions, repayment schedules, and credit instruments. Practice in the procedure of evaluating farm resources with attention to information needed for resource valuation, appraisal farms and procedures, discounting and depreciation.
Prerequisite: None.

AG 336 T-AGR 222 Farm Electrification 3 2 4

A study of the basic principles and systems, and their application to agricultural production with emphasis on equipment for controlling the utilization of electricity.
Prerequisite: None.

AG 308 T-AGR 203 Pesticide Application 2 2 3

A study of the correct application of pesticides. Economics of custom application; equipment, precautions, and legal aspects of application.
Prerequisites: T-AGR 145, T-AGR 165.

BUS 364 T-BUS 123 Business Finance 3 0 3

Financing of business units, as individuals, partnerships, corporations, and trusts. A detailed study is made of short-term, long-term, and consumer financing.
Prerequisite: None.

BUS 351 T-BUS 115 Business Law 3 0 3

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments and agencies.
Prerequisite: None.

BUS 372 T-BUS 272 Principles of Supervision 3 0 3

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed.
Prerequisite: None.

SOCIAL SCIENCE ELECTIVES

X T-SSC 201 Social Science 3 0 3

An integrated course in the social sciences, drawing from the fields of anthropology, psychology, history, and sociology.
Prerequisite: None.

X T-SSC 202 Social Science 3 0 3

A further study of social sciences with emphasis on economics, political science, and social problems as they relate to the individual.
Prerequisite: T-SSC 201.

SOC 310 T-PSY 206 Applied Psychology 3 0 3

A study of the principles of psychology that will be of assistance in the understanding of inter-personal relations on the job. Motivation, feelings, and emotions are considered with particular reference to on-the-job problems. Other topics investigated are: employee selection, supervision, job satisfaction, and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.
Prerequisite: None.

SOC 302 T-ECO 102 Economics 3 0 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large.
Prerequisite: None.

X T-SSC 205 American Institutions 3 0 3

A study of the effect of American social, economic, and political institutions upon the individual as a citizen and as a worker. The course dwells upon current local, national, and global problems viewed in the light of our political and economic heritage.
Prerequisite: None.

X T-POL 201 United States Government 3 0 3

A study of government with emphasis on basic concepts, structure, powers, procedures and problems.
Prerequisite: None.

X T-SOC 207 Rural Society 3 0 3

A study of selected elements of rural sociology with emphasis on current social changes. The course provides a sociological background for the understanding of rural social changes. Areas of study include rural culture, group relationships, social classes, rural and suburban communities, farm organizations, the communication of agricultural technology, rural social problems, agricultural adjustment and population change.
Prerequisite: None.

NORTH CAROLINA DEPARTMENT OF COMMUNITY COLLEGES
Agricultural and Biological Education
Agricultural Equipment Technology State Advisory Committee
1966-67

Committee Purpose

The purpose of the Agricultural Equipment Technology State Advisory Committee is to act in an advisory capacity to the Section of Agricultural and Biological Education and the community college institutions relative to the following areas:

1. Evaluation of program need
2. Program philosophy, objectives, guidelines, and research
3. Curriculum development
4. Program equipment and facility needs
5. Recruitment of faculty
6. Recruitment of students
7. Employment of graduates
8. Public information and relations
9. Program evaluation
10. Other concerns

The committee has no administrative or decision making authority. The name signifies its primary function which is to give advice.

Committee Membership

The committee is composed of nine members of the Carolinas Farm and Power Equipment Dealers Association, Inc. (nominated by the president); the Executive Director of the Carolinas Farm and Power Equipment Dealers Association; one member of the Vocational Agricultural Education Section of the North Carolina Department of Public Instruction; one member of the Plant Science and Technology Department of The Agricultural and Technical College of North Carolina; and one member of the Biological and Agricultural Engineering Department of North Carolina State University.

Agricultural Equipment Technology State Advisory Committee

1966-67 Membership

John M. Alexander
Raleigh Tractor & Truck Company
Raleigh, North Carolina

Charles Allman
Marion Equipment Company
Marion, North Carolina

J. R. Baldwin
Baldwin-Garrett Company
Greensboro, North Carolina

W. H. Boyer
J. M. Edgerton & Son, Inc.
Goldsboro, North Carolina

J. D. Hines
Enfield Tractor & Implement Company
Enfield, North Carolina

John D. Love
Love Tractor Sales, Inc.
Reidsville, North Carolina

W. B. Sutton
Carolina Tractors, Inc.
Goldsboro, North Carolina

John Tulloss
Tulloss Tractor Company, Inc.
Rocky Mount, North Carolina

P. L. Yelton
Lutz-Yelton Tractor & Truck Company
Shelby, North Carolina

A. A. Chappell, Executive Director
Carolinas Farm & Power Equipment Dealers Association, Inc.
111 North Tarboro Street
Wilson, North Carolina

J. B. Boone, Assistant Supervisor
Vocational Agricultural Education
North Carolina Department of Public Instruction
Raleigh, North Carolina 27602

Agricultural Equipment Technology State Advisory Committee

1966-67 Membership

E. S. Carr, Sr.
Department of Plant Science and Technology
The Agricultural and Technical College of North Carolina
Greensboro, North Carolina 27411

J. M. Fore
Department of Biological and Agricultural Engineering
School of Agriculture and Life Sciences
North Carolina State University
Raleigh, North Carolina 27607

VT 001 236
Standards for Eye Protection in Public Schools.

Texas State Dept. of Health, Austin
Pub Date - Jun65
MF AVAILABLE IN VT-ERIC SET 22

*EYES, *STANDARDS, *SCHOOL SAFETY,

The basis for these standards was the American Standards Association code Z2.1-1959. Aspects discussed are--(1) Purpose and Scope, (2) Exceptions, (3) Definitions, (4) General Requirements, (5) Eye Protectors, and (6) Materials and Methods of Test of Protectors. A table to facilitate selection of eye- and face-protective devices is included. (EM)

VT 001 236

ED022065

INDUSTRIAL HYGIENE

Standards for
Eye Protection
in Public Schools

Occupational Health Regulation No.5

TEXAS STATE DEPARTMENT of HEALTH
Division of Occupational Health
and Radiation Control

VT001236

OH 35 June 1965

STANDARDS FOR FACE AND EYE PROTECTIVE DEVICES IN PUBLIC SCHOOLS

STANDARDS FOR FACE AND EYE PROTECTIVE DEVICES IN PUBLIC SCHOOLS were adopted by the Texas State Board of Health on June 14, 1965. Basis for these standards was obtained from American Standards Association Code Z2.1 - 1959. These actions are in accordance with the authority granted in Article 4418(d) of The Revised Civil Statutes, State of Texas, and are promulgated in accordance with Article 4477, Section 19(b).

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

TABLE OF CONTENTS

1. Purpose and Scope 1
    1.1 Purpose 1
    1.2 Scope 1

2. Exceptions 1

3. Definitions 1
    3.1 General Information 1
    3.2 Specific Definitions 1

4. General Requirements 3

5. Eye Protectors 4
    5.1 Face Shields 4
    5.2 Helmets and Hand Shields 5
    5.3 Goggles, Eyecup 5
    5.4 Spectacles, Metal or Plastic Frame 6
    5.5 Goggles, Flexible Fitting 6
    5.6 Goggles, Plastic Eyeshield 7
    5.7 Spectacles, Plastic Eyeshield 7
    5.8 Goggles, Foundrymen's 8

6. Materials and Methods of Test of Protectors . . . 9
    6.1 Materials 9
    6.2 Disinfection 9
    6.3 Corrosion Resistance 9
    6.4 Water Absorption 10
    6.5 Flammability 10
    6.6 Impact 10

Tables
    Table 1, Selection of Eye and Face Protective Devices 12

Appendix for Section 6 13
    A1 Water Absorption Test 13
    A2 Selection of Shade Numbers for Welding Filters 15
    A3 Maintenance and Disinfection of Eye Protectors 16
    A4 Fitting of Goggles and Spectacles 17

"STANDARDS FOR FACE AND EYE PROTECTIVE DEVICES IN PUBLIC SCHOOLS"

1. PURPOSE AND SCOPE

1.1 Purpose. The purpose of this standard is to provide governing boards and administrators of Texas school districts reasonable and adequate means, ways and methods for the proper selection and safe use of eye protective equipment.

1.2 Scope. This standard shall apply to all teachers and pupils within Texas public schools participating in certain vocational, industrial arts, and chemical-physical courses or laboratories where potentially hazardous operations exist. These standards were extracted from American Standards Association Bulletin Z2.1 - 1959, which is to be used as a further reference for material not contained within said standards.

2. EXCEPTIONS

Variations from the requirements of this standard may be granted by the Texas State Department of Health only when it is demonstrated to the satisfaction of said agency that equivalent protection is afforded. For protection of personnel involved with operations not listed therein, please consult the Division of Occupational Health and Radiation Control, Texas State Department of Health.

3. DEFINITIONS

3.1 General Information.

3.1.1 The word "approved" refers to approval by the Texas State Department of Health, i.e., the agency having jurisdiction over the specific requirement.

3.1.2 In this standard, the use of the word "shall" indicates a mandatory requirement. The word "should" indicates a recommendation.

3.2 Specific Definitions.

Bridge Size: The distance between lenses on the nose side of each eye, expressed in millimeters.

Contaminant: A harmful material that is foreign to the normal atmosphere.

Cover Plate: A removable pane of colorless glass, plastic-coated glass, or plastic that covers the filter plate and protects it from damage.

Dust: Finely divided solid particles generated by processing (including handling, crushing, grinding, or pulverizing) materials such as rock, metal, wood, and grain.

Eyepiece: A gastight transparent window in a gas-mask facepiece through which the wearer may see.

Eye Size: A measurement expressed in millimeters and denoting the size of the lens-holding section of an eye frame.

Face Shield: A device worn in front of the eyes and a portion of or all of the face, whose predominant function is protection of the eyes and face.

Filter Plate: Removable pane in the window that absorbs varying proportions of the ultraviolet, visible, and infrared rays according to the composition and density of the plate.

Fume: Solid dispersoids formed by condensation of vapors, such as those from heated metals.

Goggles: A device, with contour-shaped eyecups or facial contact with glass or plastic lenses, worn over the eyes and held in place by a headband for the protection of the eyes and eye sockets.

Hand Shield: A device, usually held in the hand or supported on the wearer's chest, designed to protect the eyes and face during welding operations.

Helmet: A device that is worn by a person to shield the eyes, face, neck, and other parts of the head.

Lens: The transparent glass or plastic device through which the wearer of the protective goggles or spectacles sees and which provides protection to the eyes against flying objects, glare, or injurious radiation, or a combination of these hazards.

Lens, Corrective: A lens ground to the wearer's individual corrective prescription.

Mist: Suspended liquid droplets generated by breaking up a liquid into a dispersed state.

Particulate Matter: Matter occurring in the form of minute separate particles, such as dust, fume, mist, and fog; a dispersoid.

Protector: A device that provides head, face and eye protection against the hazards of processes encountered in employment or in the natural environment.

Shield: A device to be held in the hand, or supported without the aid of the operator, whose predominant function is protection of the eyes and face.

Spectacle: A device patterned after conventional-type spectacle eyewear but of more substantial construction, either with or without side shields, and with clear, impact-resistant filter or corrective lenses of glass or plastic.

4. GENERAL REQUIREMENTS

4.1 Eye protection shall be required where there is a reasonable probability of injury to the body that can be prevented by such protection.

4.2 In such cases, governing boards and administrators of Texas school districts shall furnish protectors of a type suitable for the work to be performed, and participating teachers and pupils shall use such protectors.

4.3 No person shall be subjected, without protection, to a hazardous environmental condition.

4.4 Protectors shall meet the following minimum requirements:

(1) They shall provide adequate protection against the particular hazards for which they are designed.

(2) They shall be reasonably comfortable when worn under the designated conditions.

(3) They shall fit snugly and shall not unduly interfere with the movements of the wearer.

(4) They shall be durable.

(5) They shall be capable of being disinfected.

(6) They shall be easily cleanable.

4.5 Protectors should be kept clean and in good repair.

4.6 Eye protectors shall be provided where machines or operations present the hazard of flying particles, pieces, or substances.

4.7 Workers whose vision requires the use of corrective lenses in spectacles and who are required by this standard to wear protective goggles shall be provided with goggles of one of the following types:

(1) Goggles whose protective lenses provide optical correction, or

(2) Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles, or

(3) Goggles that incorporate corrective lenses mounted behind the protective lenses.

4.8 Only protectors which bear the label of or meet the standards set forth in American Standards Association Bulletin Z2.1 - 1959 shall be used.

5. EYE PROTECTORS

5.1 FACE SHIELDS

5.1.1 Function. The devices described in this section are designed to provide protection to the face (i.e., the front part of the head including forehead, eyes, cheeks, nose, mouth, chin) and neck, where required, from flying particles and sprays of hazardous liquids and, in addition, to provide antiglare protection where required.

5.1.2 Intended Uses. Some typical uses for face shields include the following: (1) woodworking operations where chips and particles fly; (2) metal machining causing flying particles; (3) buffing, polishing, wire brushing, and grinding operations where flying particles or objects may strike the face; (4) spot welding; (5) handling hot or corrosive materials.

5.2 HELMETS AND HAND SHIELDS

5.2.1 Function. The devices described in this section are designed to provide protection for the eyes, face, ears, and neck against intense radiant energy. Typical operations which require helmets or hand shields include various kinds of arc welding and heavy gas cutting.

5.2.2 Styles. The helmet and the hand shield are made to the same basic design and of the same basic materials---a bowl-shaped or modified bowl-shaped device containing a window with filter plate which allows the wearer to see the radiant object, yet prevents harmful intensities of radiation from reaching his eyes. The helmet headgear has an adjustable frame by which it is supported on the head; while the hand shield has a handle attached to the bottom by which it is held in the hand. The basic designs may be modified to provide protection against special hazards, but modified equipment shall meet the same requirements as the basic design.

5.3 GOGGLES, EYECUP

5.3.1 Models. The two basic types of eyecup goggles shall be subdivided into the following classes:

Chippers' Models providing protection against flying objects. Eyecups shall be ventilated in a manner to permit circulation of air. Ventilation openings shall be such as to exclude a spherical particle 0.04 inch in diameter.

Dust and Splash Models providing protection against relatively fine dust particles or liquid splashes. Eyecups shall be ventilated in a manner to permit circulation of air. The ventilation openings shall be baffled or screened to prevent the direct passage of dust or liquids into the interior of the eyecups.

Welders' and Cutters' Models providing protection against glare and injurious radiations. The basic designs may be modified to provide more protection against special hazards, but the modified equipment shall meet the same requirements as the basic design. Eyecups shall be ventilated in a manner to permit circulation of air. The ventilation openings shall be baffled to prevent the passage of light rays into the interior of the eyecups.

5.4 SPECTACLES, METAL OR PLASTIC FRAME

5.4.1 Protection. Spectacles shall provide protection to the eye from flying objects and, where required, from glare and injurious radiations. Spectacles without side shields are intended to provide frontal eye protection only. Where side as well as frontal eye protection is required, the spectacles shall be provided with side shields. The edge of the side shield shall have a smooth finish or shall be padded.

5.4.2 Materials and Methods of Test.

5.4.2.1 General materials used shall be capable of withstanding the disinfection, corrosion resistance, water absorption, and inflammability tests outlined in Section 6.

5.5 GOGGLES, FLEXIBLE FITTING

5.5.1 Description. Goggles shall consist of a frame (composed of a flexible, chemical-resistant, nontoxic, nonirritating, and slow-burning material, forming a lens holder), lenses, and a positive means of support on the face such as an adjustable headband of suitable material to retain the frame comfortably and snugly in place in front of the eyes. The lens holder shall be such that the lenses are held firmly and tightly and may be removed or replaced without the use of tools. The goggles may be ventilated or not, as required by their intended use. Where chemical goggles are ventilated, the openings shall be such as to render the goggles splashproof.

5.5.2 Protection. Goggles shall provide eye protection from fine dusts, fumes, liquids, splashes, mists, and spray.

5.5.3 Application. Specific application for use of flexible fitting goggles will be found in Table 1.

5.5.4 Materials and Methods of Test. Plastic lenses used in flexible fitting goggles shall be not less than 0.050 inch in thickness. Materials used shall be capable of withstanding the disinfection, corrosion resistance, water absorption, and flammability tests outlined in Section 6.

5.6 GOGGLES, PLASTIC EYESHIELD

5.6.1 Description. The goggles shall consist of a frame of plastic material, lens or lenses, and a means of support such as an adjustable headband to retain the goggles in front of the eyes. The frame and lens need not be of the same material. The lens need not be an integral part of the goggles. The frame may be translucent, clear, or opaque, and may be ventilated or not, as required by its intended use. The edge of the frame which bears against the face shall have a smooth surface free from roughness or irregularities which might cause discomfort to the wearer.

5.6.2 Protection. The goggles shall provide protection against flying objects and, where required, against glare and injurious radiations. Where the goggles are used for protection against injurious light radiation, the lenses and frames shall meet the requirements of Appendix A2 and the frames shall prevent the passage of injurious light rays.

5.6.3 Application. Specific application for use of plastic eyeshield goggles will be found in Table 1.

5.6.4 Materials and Methods of Test. Where plastic lenses are used in plastic eyeshield goggles, they shall be not less than 0.050 inch in thickness. If glass lenses are used, they shall be not less than 3.0 millimeters nor more than 3.8 millimeters in thickness. Materials used shall be capable of withstanding the disinfection, corrosion, resistance, water absorption, and flammability tests outlined in Section 6.

5.7 SPECTACLES, PLASTIC EYESHIELD

5.7.1 Description. Spectacles shall consist of a frame of metal, fiber, or plastic material, plastic lens or lenses, and temples or other suitable means of support to retain the frame before the eyes. The lens or lenses need not be an integral part of the frame. The spectacles shall have side shields, if required by their intended use.

5.7.2 Protection. Spectacles shall provide protection to the eye from flying objects and, where required, from glare and injurious radiation. Spectacles without side shields provide frontal eye protection only. Where side as well as frontal eye protection is required, the spectacles shall be provided with side shields.

5.7.3 Application. Specific application for use of plastic eyeshield spectacles will be found in Table 1.

5.7.4 Materials and Methods of Test. Plastic lenses used in plastic eyeshield spectacles shall be not less than 0.050 inch in thickness. Materials used shall be capable of meeting the applicable requirements and withstanding the tests outlined in Section 6.

5.8 GOGGLES, FOUNDRYMEN'S

5.8.1 Description. Goggles shall consist of a mask made of a flexible, nonirritating, and noncombustible or slow-burning material, such as leather or flexible plastic, metal lens holders attached thereto, lenses, and a positive means of support on the face, such as an adjustable headband, to retain the mask comfortably and snugly in place in front of the eyes. The edge of the mask in contact with the face shall be provided with a binding of corduroy or other suitable material. The lens holders shall be so designed that the lenses are held firmly and tightly and may be readily removed or replaced. The lens holders shall be ventilated to permit circulation of air. Ventilation openings shall exclude a spherical particle 0.04 inch in diameter. For protection against heavy concentrations of dust, the use of a fine-mesh screen lining (e.g., 100-mesh screen) is recommended. Such lining shall be suitably and permanently fastened to the inside surface of each lens holder assembly.

5.8.2 Protection. The foundryman's goggles shall provide protection against impact and hot-metal splash hazards encountered in foundry operations such as melting, pouring, chipping, babbitting, grinding, and riveting. Where required, they shall also provide protection against dusts.

5.8.3 Application. Specific application for use of foundrymen's goggles will be found in Table 1.

5.8.4 Materials and Methods of Test. Materials used shall be capable of withstanding the disinfection, corrosion-resistance, water-absorption, and flammability tests outlined in Section 6.

6. MATERIALS AND METHODS OF TEST OF PROTECTORS

6.1 Materials. Materials used in the manufacture of eye protectors shall combine mechanical strength and lightness of weight to a high degree, shall be nonirritating to the skin when subjected to perspiration, and shall withstand frequent disinfection by the methods hereinafter prescribed. Where metals are used, they shall be inherently corrosion resistant.

6.2 Disinfection. All materials shall be such as to withstand, without visible deterioration or discoloration, washing in detergents and warm water, rinsing to remove all traces of detergent, and disinfection by the following methods:

(1) Immersion for 10 minutes in a solution of formalin made by placing one part of 40 percent formaldehyde solution in 9 parts of water at a room temperature of 68 F.

(2) Subjection to a moist atmosphere of formaldehyde for a period of 10 minutes at a room temperature of 68 F.

(3) Immersion for 10 minutes in a solution of modified phenolics, hypochlorite, or quaternary ammonium compounds in strength specified by the manufacturer at a room temperature of 68 F.

6.3 Corrosion Resistance. Metal parts shall be tested for corrosion resistance by placing them in a boiling aqueous 10-percent (by weight) solution of sodium chloride for a period of 15 minutes. The parts upon being removed from this solution shall be immediately immersed in a 10-percent (by weight) aqueous solution of sodium chloride at a room temperature of 68 F. They shall then be removed from this solution and, without wiping off the adhering liquid, allowed to dry for 24 hours at room temperature. The metal parts shall then be rinsed in lukewarm water and allowed to dry. On visual inspection, the metal parts shall show no signs of roughening of the surface resulting from corrosion.

6.4 Water Absorption. Plastic parts shall be tested for water absorption and the results calculated in accordance with Test Method No. 7031 of Federal Specification L-P-406 (see Appendix A1). The amount of the water absorbed shall not exceed 5 percent.

6.5 Flammability

6.5.1 Eyecup Goggles. Eyecup goggles shall be tested for flammability by use of a 5/8" high diameter Bunsen burner, adjusted for a 3/4" high non-luminous flame of commercial natural gas (1,000 - 1,200 British thermal units). The temple side of the specimen shall be held at the tip of this flame in a draft-free room and the time (in seconds) required to ignite the material so that it will remain burning after the flame is removed shall be determined. The time required to ignite the specimen in the manner described shall be not less than 4 seconds.

6.5.2 All other types. Where plastic materials are used, such materials shall be slow burning. Cellulose nitrate, or materials having flammability characteristics approximating those of cellulose nitrate, shall not be used. Flammability of the materials shall be no greater than that exhibited by cellulose acetate or acetate butyrate.

6.6 Impact

6.6.1 Test For Lenses of All Types. The frame with lens shall be supported on a wooden block of such size and shape as to fit the frame securely but not to touch the lens. A 7/8 inch diameter steel ball, weighing approximately 1.56 ounces, shall be freely dropped from a height of 50 inches onto the horizontal upper surface of the lens. The edge of the lens shall not chip from the shock nor shall the lens be displaced from the frame.

6.6.2 Lens on Block. The lens shall be removed from the frame and placed horizontally on the end of a hardwood tube having an upper periphery conforming in shape and size to the lens to be tested and a wall thickness not greater than 3/16 inch. A washer of rubber packing not more than 1/8 inch thick and of the same shape and size as the end of the tube shall be placed between the lens and the tube. The rubber washer shall be of the quality required for a grade A gasket in Federal Specification HH-G-156. The 7/8 inch steel ball shall be freely dropped from a height of 50 inches onto the horizontal outer surfaces of the lens. The lens shall not fracture from the impact of the steel ball.

6.6.3 Breakage Pattern. As a test to determine the type of breakage pattern exhibited by a lens when subjected to a force sufficient to break it, a lens may be broken by increasing the height of drop of the 7/8 inch steel ball or by employing a heavier ball. If made of glass, the lens shall break predominately with radial cracks with a minor tendency toward concentric cracks. Any tendency to break with lines of cleavage parallel to the surface indicates an unsatisfactory heat treatment; and the lenses represented by that sample shall be considered as not conforming to these requirements.

TABLE 1

Selection of Eye- and Face-Protective Devices

Hazard Involved	Part To Be Protected	Permissible Protective Devices	
		Type	Reference
Relatively large flying objects	Eyes, Face	Goggles Spectacles Face Shields	5.3,5.6,5.8 5.4,5.7 5.1
Dust and small flying particles	Eyes, Face	Goggles Spectacles Face Shields	5.3,5.6,5.8 5.4,5.7 5.1
Dust and wind	Eyes	Goggles Spectacles	5.3,5.6 5.4,5.7
Molten metal	Eyes, Face	Goggles Spectacles Face shields	5.3,5.6,5.8 5.4,5.7 5.1
Gases, fumes, and smoke	Eyes, Face	Goggles	5.5,5.6
Liquids	Eyes, Face	Goggles Face shields	5.5,5.6 5.1
Reflected light or glare	Eyes	Goggles Spectacles	5.6 5.4,5.7
Injurious radiant energy (moderate)	Eyes	Goggles Helmets Hand shields Face shields	5.3 All described in 5.2 All described in 5.2 (must include crown protector and chin protector) 5.1
Injurious radiant energy (intense)	Eyes, Face	Helmets Hand shields	All with spectacles described in 5.4 All with spectacles described in 5.4

APPENDIX FOR SECTION 6

A1. WATER ABSORPTION TEST (FOR WEIGHT AND DIMENSIONAL CHANGES)

A1.1 Specimens

A1.1.1 Molding Compounds. Test specimens for molding compounds shall be disks 2 inches in diameter by 0.125 ± 0.007 inch thick.

A1.1.2 Sheets. Test specimen of laminated compounds and specimens cut from material shall be 1 by 3 inches by the thickness of the sheet.

A1.1.3 Rods. The test specimen for rods shall be 1 inch in length for rods 1 inch in diameter or under and ½ inch in length for larger diameter rods. The diameter of the specimen shall be the diameter of the finished rod.

A1.1.4 Tubes. The test specimen for tubes less than 3 inches in inside diameter shall be the full section of the tube and 1 inch in length. For tubes 3 inches or more in inside diameter, a rectangular specimen shall be cut 3 inches in length in the circumferential direction of the tube and 1 inch in width length-wise of the tube.

A1.1.5 Finish. The test specimens for sheets, rods, and tubes shall be machined, sawed, or sheared from the sample so as to have smooth edges free from cracks. The cut edges shall be made smooth by finishing with No. 000 or finer sandpaper or emery cloth. Sawing, machining, and finishing operations shall be slow enough so that the material is not heated appreciably.

A1.2 Apparatus

(1) Circulating air oven maintained at 122 ± 4 F (50 ± 2 C)

(2) A desiccator

(3) Analytical balance

(4) Micrometer, gage, or caliper capable of measuring accurately to 0.001 inch.

A1.3 Procedure

A1.3.1 Three specimens of the sample to be tested shall be conditioned in an oven at 122 ± 4 F (50 ± 2 C) for 24 hours. After conditioning, the specimens shall be cooled in a desiccator and weighed. Dimensions of the specimens shall be measured with a micrometer gage to 0.001 inch. The specimens shall then be completely immersed in distilled water maintained at a temperature of 77 ± 4 F (25 ± 2 C). At least 50 milliliters of distilled water shall be employed for immersing each specimen. At the end of 24 hours immersion, each specimen shall be removed, the surface moisture quickly absorbed by a dry cloth, and the specimen reweighed. If the specimen is 1/16 inch or less in thickness, it shall be put in a weighing bottle immediately after removing the surface moisture and shall be weighed in the bottle. The dimensions shall then be remeasured.

A1.3.2 When materials are known or suspected to contain any appreciable amount of water-soluble ingredients, the specimens after immersion, weighing, and measuring shall be reconditioned for the same time and temperature as used in the original drying period. They shall then be cooled in a desiccator and immediately reweighed. If the reconditioned dry weight is lower than the conditioned dry weight found after the original drying before immersion, the difference shall be considered as water-soluble matter lost during the immersion test. For such materials, the water absorption value shall be taken as the sum of the increase in weight upon immersion and of the weight of the water-soluble matter.

A1.4 Report. The report shall include the data specified under Section 1, paragraph 8 of Specification L-P-406 and the following:

(1) The percentage increase in weight during immersion calculated to nearest 0.01 percent as follows:

Increase in weight, percent =

$$\frac{\text{Wet Weight} - \text{Conditioned Weight}}{\text{Conditioned Weight}} \times 100$$

(2) The percentage of soluble matter lost during immersion, if determined, calculated to nearest 0.01 percent as follows:

Soluble matter lost, percent =

$$\frac{\text{Conditioned Weight} - \text{Reconditioned Weight}}{\text{Conditioned Weight}} \times 100$$

When the weight on reconditioning the specimen after immersion in water exceeds the conditioned weight prior to immersion, report "no loss of soluble matter".

(3) The percentage of water absorbed in 24 hours, which is the sum of the values in items (1) and (2).

(4) The percentage change in each dimension during immersion.

(5) Observations regarding any change in physical condition of the specimen.

A2. SELECTION OF SHADE NUMBERS FOR WELDING FILTERS

The following is a guide for the selection of the proper shade numbers of filter lenses or windows used in welding. These recommendations may be varied to suit the individual's needs.

Welding Operation	SHADE NUMBERS
Shielded metal-arc welding 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	10
Inert-gas metal-arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	11
Inert-gas metal-arc welding (ferrous) 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	12
Shielded metal-arc welding	
3/16-, 7/32-, 1/4-inch electrodes	12
5/16-, 3/8-inch electrodes	14

Atomic hydrogen welding	10-14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	3 or 5
Heavy cutting, over 6 inches	5 or 6
Gas welding (light), up to 1/8 inch	4 or 5
Gas welding (medium), 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy), over 1/2 inch	6 or 8

Note: In gas welding or oxygen cutting, where the torch produces a high yellow light, it is desirable to use a filter or lens that absorbs the yellow or sodium line in the visible light of the operation.

A3. MAINTENANCE AND DISINFECTION OF EYE PROTECTORS

A3.1 Maintenance.

A3.1.1 It is essential that the lenses of eye protectors be kept clean. Continuous vision through dirty lenses can cause eye strain, which could possibly result in substandard production by the operator. Daily cleaning of the eye protector with soap and hot water is recommended.

A3.1.2 Replace pitted lenses. Pitted lenses, like dirty lenses, can be a source of reduced vision. They should be replaced periodically. Deep scratches or excessive pitting of lenses are apt to weaken the lenses and cause them to break more readily.

A3.1.3 Replace headbands. Slack, worn-out, sweat-soaked, or twisted headbands do not hold the eye protector in proper position. Visual inspection can determine when the elasticity is reduced to a point beyond proper function.

A3.1.4 Keep goggles in case when not in use. Spectacles, in particular, should be given the same care as one's own glasses, since the frame, nose pads, and temples can be damaged by rough usage.

A3.2 Disinfection. Personal protective equipment which has been previously used shall be disinfected before being issued to another employee. Even when each employee is assigned protective equipment for extended periods, it is recommended that this equipment be cleaned and disinfected regularly. Several methods for disinfecting eye-protective equipment are acceptable. The most effective method is to disassemble the goggles or spectacles and thoroughly clean all parts with soap and hot water. Carefully rinse all traces of soap and replace defective parts with new ones. Swab thoroughly or completely immerse all parts for 10 minutes in a solution of germicidal deodorant fungicide. Remove parts from solution and suspend in a clean place for air drying at room temperature or with heated air. Do not rinse after removing parts from solution because this will remove the germicidal residue which retains its effectiveness indefinitely. The dry parts or items should be placed in clean, dust-proof containers, such as a box, bag or plastic envelope to protect them until re-issue.

A4. FITTING OF GOGGLES AND SPECTACLES

A4.1 Cup Goggles. The first step in fitting cup goggles is to adjust the nose bridge. Both the ball and link-chain bridges of goggles are adjustable to accommodate the individual wearer. Both types of bridges usually have some means for shortening or lengthening. In either case, to shorten or lengthen the bridge, the instructions of the manufacturer should be followed. Chain not needed after adjustment should be cut off. The chain should be insulated to protect the nose of the wearer.

The proper procedure for adjusting headbands is to keep the band loose enough to slip two fingers under it, palm side down, without stretching. Headbands should be worn low and flat and approximately at the base of the skull in order to hold goggles in a comfortable position. Most cup goggles are thinner and slanted away at the lower nasal sides, which makes for comfort as well as easy identification in getting them right side up.

A4.2 Spectacles. The first step in fitting spectacles is to determine the proper eye and bridge sizes. This is done best by using fitting samples and placing the sample spectacles on the nose to arrive at the proper size. The adjustable rocker pads should fit flush against the sides of the nose without allowing the metal bridge of the spectacle to rest on the nose bridge of the wearer. The small metal arms, to which the pearloid pads are attached, can be readily adjusted by round nose pliers which are especially designed for this purpose. To fit the temples comfortably over the ears, hold the spectacle firmly in one hand and shape the bow of the temple gradually by drawing it slowly between thumb and forefinger of other hand. Temples should be angled down from frame to ear so that lenses will be perpendicular to the line of vision.

Prescription safety spectacles should be fitted only by qualified optical personnel.

VT 001 261

An Examination of the Cooperative Attitude Between Vocational Agriculture Instructors and County Agents in Planning and Conducting Instructional Programs in Oklahoma.

Smith, Wendell Lee * Hull, William L.
Oklahoma Vocational Research Coord. Unit, Stillwater
Research Bull-7.
Oklahoma State Univ., Stillwater. Dept. of Agr. Educ.
Pub Date - Oct66
MF AVAILABLE IN VT-ERIC SET. 21p.

*EXTENSION AGENTS, *VOCATIONAL AGRICULTURAL TEACHERS, *COOPERATION, *ADULT EDUCATION PROGRAMS, ATTITUDES, PROGRAM EVALUATION, PROGRAM PLANNING, PROGRAM ADMINISTRATION, INDIVIDUAL CHARACTERISTICS, SURVEYS,

Oklahoma,

The deterrents and incentives to cooperation between extension agents and vocational agriculture teachers were studied. The sample included 30 agents and 60 teachers selected from 30 counties randomly selected from the 74 in the state. All of the agents and 50 of the teachers completed a 34-factor mailed questionnaire which contained three categories relating to cooperation--(1) personal factors, (2) cooperation in planning and conducting educational programs, and (3) evaluation factors. The agents were older and had more graduate education, experience, and tenure. Agents and teachers in larger counties who hade more advanced in-state degrees and less experience regarded cooperation more positively. Both groups regarded conducting meetings as the best framework for cooperation. Responsibility for sharing publicity and willingness to serve the urban people were regarded differently by the teacher and agent groups. Recommendations included--(1) Agents and teachers should cooperate on youth programs, (2) They should set an example of cooperation in larger counties, (3) They should serve on each other's advisory councils, and (4) They should cooperate in meeting the technological needs of adults. (JM)

VT 001 261

1261

ED022065

AN EXAMINATION OF THE COOPERATIVE ATTITUDES BETWEEN VOCATIONAL AGRICULTURE INSTRUCTORS AND COUNTY AGENTS IN PLANNING AND CONDUCTING INSTRUCTIONAL PROGRAMS IN OKLAHOMA

By

Wendell Lee Smith and William L. Hull

RESEARCH BULLETIN NUMBER 7

Published Jointly By
The Vocational Research Coordinating Unit
and
The Department of Agricultural Education
Oklahoma State University

October, 1966

VT001261

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

TABLE OF CONTENTS

Page

Introduction 1

Procedure 1

Definition of Terms 5

Background Characteristics of Respondents 5

The Effect of Personal Factors on Cooperation 10

The Effect of Educational Programs on Cooperation 10

The Effect of Evaluation on Cooperation 13

Summary of Findings 13

Recommendations 18

A Selected Bibliography 19

AN EXAMINATION OF THE COOPERATIVE ATTITUDES BETWEEN VOCATIONAL AGRICULTURE INSTRUCTORS AND COUNTY AGENTS IN PLANNING AND CONDUCTING INSTRUCTIONAL PROGRAMS IN OKLAHOMA

By Wendell Lee Smith and William L. Hull

Introduction

The rapid expansion of technical knowledge required to proficiently manage a farm business places great stress on adult education in agriculture. The two agencies primarily responsible for rural adult education in America are the Cooperative Extension Service and Vocational Agriculture. Consequently, for the most efficient utilization of resources in agricultural education, a cooperative attitude of mutal understanding is essential.

Today adult educators face a problem of meeting the needs of urban as well as rural people. The migration of people to urban centers presents problems to the extension agent and adult educator which differ from the rural farm atmosphere. This dynamic setting prompts this study to ascertain the deterrents and incentives to cooperation between extension agents and agricultural instructors in conducting adult programs of instruction.

Procedure

The population for this investigation may be considered the teachers of vocational agriculture and the extension service county agents in Oklahoma.

A random sample of thirty counties was drawn by means of a table of random digits. Two vocational agriculture teachers within each of the thirty counties were also selected by means of this table of digits.

The county extension agent in each of the counties completed the questionnaire for the extension service.

Only the counties where there were at least two vocational agriculture departments were used in obtaining the random sample, which qualified the population by eliminating Osage, Cimarron, and Cherokee counties. Seventy-four counties were eligible for participation in the study.

When a two-teacher department turned up in the random selection, the teacher with the greatest tenure completed the questionnaire. All thirty of the agents selected to participate in the study responded. Fifty of the sixty teachers, or 83.33 percent, responded.

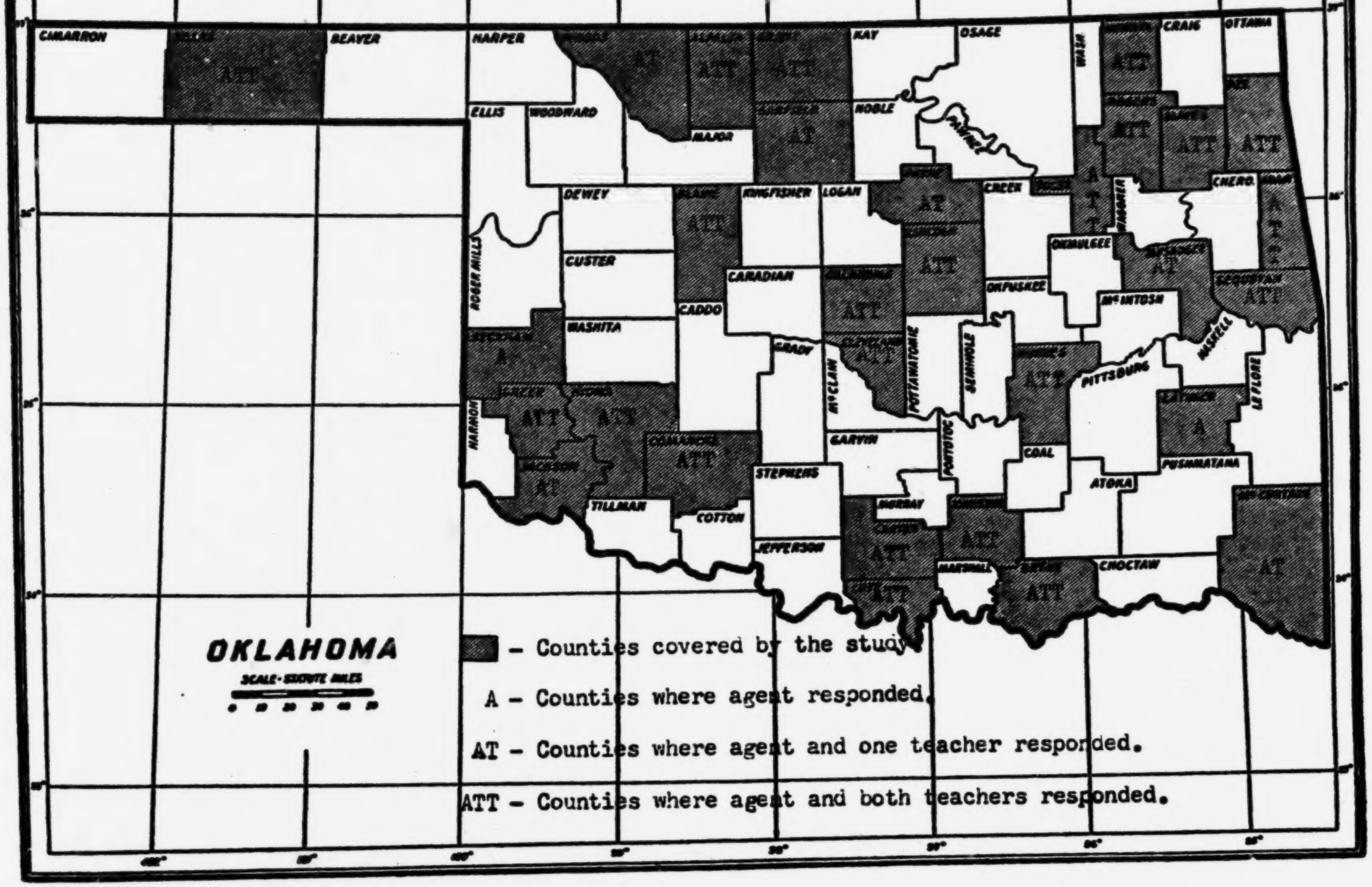
A questionnaire which included thirty-four factors which might affect working relationships between county agents and vocational agriculture teachers was constructed and sent to each agent or teacher in the sample. The first phase of the questionnaire dealt with information about respondents. The second, third, and fourth contained twenty-seven activities or factors relating to cooperative activities which were thought to be involved in the working relationships between agents and teachers of vocational agriculture.

Items on the questionnaire were rated in two different ways: "is" and "should be." To make it easy for the respondents to follow the rating pattern, the following description was listed for both factors in the following manner: extreme negative importance, slight negative importance, neutral importance, slight positive importance, extreme positive importance, and "don't know" or "can't say."

The same questionnaire was sent to the county extension agents as was sent to the vocational agriculture teachers.

Code numbers were assigned for items and information collected. Information was transferred from the questionnaire directly to the individual IBM cards.

Figure 1


CIMARRON
TEXAS
ATT
BEAVER
HARPER
WOODS
AT
ALFALFA
ATT
GRANT
ATT
KAY
OSAGE
NOWATA
ATT
CRAIG
OTTAWA
ELLIS
WOODWARD
MAJOR
GARFIELD
AT
NOBLE
PAWNEE
ROGERS
ATT
MAYES
ATT
ATT
WASH
TULSA
ATT
WAGONER
DEWEY
BLAINE
ATT
KINGFISHER
LOGAN
PAYNE
AT
LINCOLN
ATT
CREEK
CHERO.
ADAIR
ATT
CUSTER
ROGER MILLS
CANADIAN
OKLAHOMA
ATT
OKMULGEE
MUSKOGEE
AT
OKFUSKEE
McINTOSH
SEQUOYAH
ATT
CADDO
WASHITA
BECKHAM
A
GRADY
CLEVELAND
ATT
McCLAIN
POTTAWATOMIE
SEMINOLE
HUGHES
ATT
PITTSBURG
HASKELL
LE FLORE
LATIMER
A
HARMON
GREER
ATT
KIOWA
ATT
COMANCHE
ATT
JACKSON
AT
TILLMAN
COTTON
GARVIN
PONTOTOC
COAL
STEPHENS
MURRAY
JOHNSTON
ATT
ATOKA
PUSHMATAHA
McCURTAIN
AT
JEFFERSON
CARTER
ATT
LOVE
ATT
MARSHALL
BRYAN
ATT
CHOCTAW
OKLAHOMA
SCALE·STATUTE MILES
0 10 20 30 40 50
▨ - Counties covered by the study.
A - Counties where agent responded.
AT - Counties where agent and one teacher responded.
ATT - Counties where agent and both teachers responded.

To assign values to the individual responses, the following system was used.

	Extreme neg. importance	Slight neg. importance	Neutral importance	Slight pos. importance	Extreme pos. importance	Don't know or can't say
is - - -	1	2	3	4	5	0
should be	1	2	3	4	5	0

Negative:

(1) 5-1 (2) 4-1 (3) 5-2 (4) 3-1 (5) 4-2 (6) 5-3 (7) 2-1
(8) 3-2 (9) 4-3 (10) 5-4 (11) 1-1 (12) 2-2 (13) 3-3 (14) 4-4
(15) 5-5

Positive:

(16) 1-2 (17) 2-3 (18) 3-4 (19) 4-5 (20) 1-3 (21) 2-4 (22) 3-5
(23) 1-4 (24) 2-5 (25) 1-5

Thus, there were twenty-five combinations of responses which could appear on the cooperative programming area section of the questionnaire.

A value assignment of fifteen to a factor indicates neutral importance, over fifteen of positive importance, and under fifteen of negative importance.

The Mann-Whittney U Test was used to determine the level of significance and the association of the various activities or factors involved in the questionnaire that could be dichotomized. The Kruskal-Wallis one-way analysis of variance test was used to test the significance of data which could be assigned to three or more groups.

The determinant levels of confidence used were .05 and .10. Significance noted at the .05 level could not be subject to over three errors due to chance on the twenty-seven activities or factors. Significance at the .10 level could not be subject to more than five errors on the twenty-seven activities or factors.

Definition of Terms

Glory seeking. Throughout the report of this investigation, the term, "glory seeking," shall be interpreted as meaning a selfish concern in relation to individual workers trying to build a false public image by the art of introspective promotion.

Advisory council. This term shall be interpreted as meaning a group of individuals who serve to deliberate together in planning and organizing areas of instruction.

In-service training. The term, "in-service training," refers to that training which is offered while the employee is on the job or while he is on study leave. Thus, in this sense it can be distinguished from formal education.

Background Characteristics of Respondents

Four background characteristics of respondents were used as independent variables in this study. These characteristics were (1) age, (2) college degrees achieved, (3) length of experience, and (4) tenure in present location. A fifth variable was used in the analyses: it was total population within the counties. One-half of the counties had populations over 15,000 and one-half under that number. This balance gave an equal group division for comparisons.

1. Age:

Table I shows the classification of respondents by age. Teachers of vocational agriculture were somewhat younger proportionally than the county extension agents. The largest group of teachers was 25-30 years of age. This group constituted 22 percent of the teachers. In comparison with the agents, variation in the age of the teachers was greater and there was an increasing tendency toward a younger age. One agent failed to record his age.

TABLE I

CLASSIFICATION OF RESPONDENTS' AGES BY YEARS

Respondents		Age by Years							
		-25	25-30	31-35	36-40	41-45	46-50	51+	Total
County Agents	N	0	0	1	7	3	13	5	29
	%	(0)	(0)	(34.0)	(24.1)	(10.3)	(44.8)	(17.2)	(100)
Teachers of Vo. Ag.	N	4	11	6	9	9	5	6	50
	%	(8.0)	(22.0)	(12.0)	(18.0)	(18.0)	(10.0)	(12.0)	(100)
Total	N	4	11	7	16	12	18	11	79
	%	(5.1)	(13.9)	(8.9)	(20.3)	(15.2)	(22.8)	(13.9)	(100)

TABLE II

CLASSIFICATION OF RESPONDENTS BY COLLEGE DEGREES

Respondents		Bachelor of Science In State	Master of Science		Total
			Both in State	B.S. In M.S. Out	
County Agents	N	12	17	1	30
	%	(40)	(57)	(03)	(100)
Teachers of Vo. Ag.	N	27	17	6	50
	%	(54)	(34)	(12)	(100)
Total	N	39	34	7	80
	%	(49)	(43)	(09)	(100)

2. College Degrees Achieved:

Extension agents seemed to have more graduate education than did teachers. Table II shows that 60 percent of the agents had the master's degree. The percentage of teachers who had the master's degree was 40 percent. The difference in level of education between the teachers and the agents might be related, among other reasons, to age and length of time in the position. Agents were older and had been in their positions longer. Another interesting notation in the table is that more teachers than agents received the master's degree out of state, 12 percent of the teachers as compared with only 3 percent of the agents.

Three of the frequency distributions which were originally set up in the table had no respondents falling in their categories. These were (1) Bachelor of Science out of state, (2) Bachelor of Science out of state and Master of Science in, and (3) both out of state.

3. Length of Experience:

Table III shows that teachers of vocational agriculture seemed to have fewer years of experience than county extension agents. The highest proportion of the two groups, however, was fairly equal. The largest number of teachers had had between 16-20 years of experience; this proportion constituted 32 percent of their group. The highest proportion of the agents also had had 16-20 years of experience, which constituted 33 percent of their group. Twenty-one of the teachers, as compared with only one agent, had fewer than eleven years of experience.

4. Tenure in Present Location:

Extension agents seemed to have slightly more tenure in their present location than teachers did. Table IV shows that 33.3 percent of the agents had been situated in their present location fifteen years or over. The highest proportion of the teachers, on the other hand, also had had at least fifteen years of tenure which portion constituted 24 percent of their group.

TABLE III

CLASSIFICATION OF RESPONDENTS BY LENGTH OF EXPERIENCE

Respondents		Experience in Years					
		-5	5-10	11-15	16-20	21+	Total
County Agents	N	0	1	10	10	9	30
	%	(0)	(3.3)	(33.3)	(33.3)	(30.0)	(100)
Teachers of Vo. Ag.	N	8	13	9	16	4	50
	%	(16.0)	(26.0)	(18.0)	(32.0)	(8.0)	(100)
Total	N	8	14	19	26	13	80
	%	(10.0)	(17.5)	(23.7)	(32.5)	(16.2)	(100)

TABLE IV

CLASSIFICATION OF RESPONDENTS BY YEARS TENURE IN PRESENT LOCATION

Respondents		Tenure in Years						
		-2	2-5	6-8	9-11	12-14	15-	Total
County Agent	N	4	8	4	3	1	10	30
	%	(13.3)	(26.7)	(13.3)	(10.0)	(3.3)	(33.3)	(100)
Teachers of Vo. Ag.	N	9	11	7	4	7	12	50
	%	(18.0)	(22.0)	(14.0)	(8.0)	(14.0)	(24.0)	(100)
Total	N	13	19	11	7	8	22	80
	%	(16.2)	(23.7)	(13.7)	(8.7)	(10.0)	(27.5)	(100)

5. Total Population of Counties:

One-half of the counties had a population over 15,000, and the other half had a population under 15,000. The equal division offered a good basis for comparisons regarding county population.

TABLE V

CLASSIFICATION OF RESPONDENTS BY
TOTAL COUNTY POPULATION

Respondents		County Population 15,000-	-15,000	Total
County Agents	N	15	15	30
Teachers of Vo. Ag.	N	25	25	50
Total	N	40	40	80

The Effect of Personal Factors on Cooperation

This part of the bulletin is concerned with the analysis of activities and factors relating to personal factors which are involved in cooperation.

Table VI exemplified the mean relationship between college degrees achieved and respondents' opinions regarding personal factors involved in cooperation. There were three instances where significant variation between means existed. Those teachers and agents with higher college degrees viewed all three of these factors more positively than those with less education.

Another interesting relationship revealed by the data in Table VI was that respondents with a degree granted out of state viewed the factors, for the most part, more negatively than those with only degrees granted in state. Respondents with degrees granted out of state represented 9 percent of the total responding population.

Table VII showed the mean opinions of respondents who are from a county with a total population of 15,000 as compared with those whose population is under 15,000.

Significance was found on five factors in Table VII: (1) Similarity or difference in age, (2) Variation in formal education (degrees obtained, course of study), (3) Personality of the other worker, (4) Variation (type and amount) of in-service training, and (5) Degree of personal friendship. Respondents who were in a county whose population was over 15,000 viewed these items as having a more important effect on cooperation than those from the smaller counties.

The Effect of Educational Programs on Cooperation

Data in Table VIII indicated that respondents (all of whom happened to be teachers) who had fewer than five years of experience viewed cooperative

TABLE VI

MEAN EFFECT OF PERSONAL FACTORS ON COOPERATION BY LEVEL OF DEGREE

Activities or Factors	Bachelor of Science	Master of Science	
	In State N=39	Both in State N=34	B.S. In M.S. Out N=7
1. Similarity or difference in our age.	12.7	11.7	12.5
2. Variation in formal education (degrees obtained, course of study).	14.3	14.3	12.9
3. Variation in total years experience as educators of adults.	14.2	14.9	13.6
4. Tenure in present location.	13.2*	16.4*	14.1*
5. Personality of the other worker.	12.2*	17.0*	13.7*
6. Variation (type and amount) of inservice training.	14.1	14.0	14.6
7. Initiative in contacting one another.	15.1	15.6	15.1
8. Degree of personal friendship.	14.2#	16.9#	14.6#
9. Individual promotion "Glory seeking."	10.9	11.6	13.2

*Significant at the .05 level by the Mann-Whittney U Test.
#Significant at the .10 level by the Mann-Whittney U Test.

TABLE VII

MEAN EFFECT OF PERSONAL FACTORS ON COOPERATION BY POPULATION WITHIN THE COUNTIES

Activities or Factors	County Population 15,000+ N=40	 -15,000 N=40	Mean Difference
1. Similarity or difference in our age.	12.8	12.3	+.45#
2. Variation in formal education (degrees obtained, course of study).	14.1	13.1	+1.00#
3. Variation in total years experience as educators of adults.	14.7	13.1	+1.60
4. Tenure in present location.	14.4	13.5	+.90
5. Personality of the other worker.	13.9	12.8	+1.10#
6. Variation (type and amount) of inservice training.	15.1	13.6	+1.50*
7. Initiative in contacting one another.	15.1	15.2	-.13
8. Degree of personal friendship.	15.3	13.9	+1.40*
9. Individual promotion "Glory seeking."	12.6	11.6	+1.00

#Significant at .10 level by the Mann-Whittney U Test.
*Significant at .05 level by the Mann-Whittney U Test.

activities related to planning and conducting educational programs more positively than respondents with more experience. Perhaps these young workers viewed cooperation positively because they were having difficulties in getting their programs started and wanted all the help they could get.

Table IX showed that teachers and agents differed significantly on two program planning and conducting items: (1) Sharing the responsibility for publicity concerning county education programs and (2) Willingness to serve a portion or all of the residents in the county.

Table IX also showed respondents from the larger counties indicated stronger desires toward more cooperation on six of the nine items. Only two items in the entire table were viewed as having negative importance and these views represented respondents from the smaller counties.

The Effect of Evaluation on Cooperation

According to Table X, respondents (all teachers) with fewer than five years of experience had more positive views on cooperation in activities relating to evaluation of educational programs. They felt that these activities should have greater effect on cooperation than they do presently.

The writers feel one of the resons why these respondents view cooperation positively is that they are having difficulties in getting programs initiated and feel they can use all the help they can get.

Summary of Findings

Two vocational agriculture teachers and the extension agent in each of thirty randomly selected counties of Oklahoma responded to a mail questionnaire All county agents returned the questionnaire as did eighty-three percent of the teachers. Three categories for cooperative activities were listed on the

TABLE VIII

MEAN EFFECT OF FACTORS RELATING TO PLANNING AND CONDUCTING EDUCATIONAL PROGRAMS ON COOPERATION BY LENGTH OF EXPERIENCE IN YEARS

Activities or Factors	Experience in Years -5 N=8	 5-10 N=14	 11-15 N=19	 16-20 N=26	 21+ N=13
10. Sharing the responsibility for publicity concerning county educational programs.	15.0	15.4	16.2	14.2	14.4
11. Consulting each other's special abilities and knowledge in problem situations.	19.3#	14.5#	17.5#	16.5#	15.8#
12. Exchanging printed and duplicated materials or any other educational facilities.	19.9	14.9	16.6	15.6	14.6
13. Conducting joint demonstration projects or county field days.	18.6	14.1	17.2	16.7	16.2
14. Discussing community needs pertaining to adult education in agri.	20.8#	14.7#	16.4#	15.8#	15.6#
15. Willingness to serve a portion or all of the residents in the county.	18.3	15.5	16.8	15.3	16.6
16. Serving as consultants (in an advisory capacity) on each other's advisory councils.	19.0	15.8	16.4	14.5	15.0
17. Conflicting dates of important engagements or time conflicts in getting together for coop. work.	15.7	13.2	14.3	15.5	14.8
18. Working together with youth programs (4-H, FFA joint planning, etc.).	18.0	15.9	17.1	16.6	14.6

#Significant at .10 by the Kruskal-Wallis test.

TABLE IX

MEAN EFFECT OF FACTORS RELATING TO PLANNING AND CONDUCTING EDUCATIONAL PROGRAMS ON COOPERATION BY POPULATION WITHIN THE COUNTIES

Activities or Factors	County Population 15,000+ N=40	County Population -15,000 N=40	Mean Difference
10. Sharing the responsibility for publicity concerning county educational programs.	15.7	14.3	+1.40*
11. Consulting each other's special abilities & knowledge in problem situations.	16.9	16.3	+.53
12. Exchanging printed and duplicated materials or any other educational facilities.	16.0	15.9	+.05
13. Conducting joint demonstration projects or county field days.	16.8	16.1	+.70
14. Discussing community needs pertaining to adult education in agri.	16.0	16.6	-.59
15. Willingness to serve a portion or all of the residents in the county.	16.9	15.4	+1.60#
16. Serving as consultants (in an advisory capacity) on each other's advisory councils.	15.5	15.7	-.18
17. Conflicting dates of important engagements or time conflicts in getting together for coop. work.	15.2	14.1	+1.10
18. Working together with youth programs (4-H, FFA joint planning, etc.).	16.0	16.9	-.90

*Significant at .05 by the Mann-Whittney U Test.
#Significant at .10 by the Mann-Whittney U Test.

TABLE X

MEAN EFFECT OF EVALUATION FACTORS ON COOPERATION BY LENGTH OF EXPERIENCE IN YEARS

Activities or Factors	Experience in Years -5 N=8	 5-10 N=14	 11-15 N=19	 16-20 N=26	 21+ N=13
19. Discussing factors affecting the failure or success of educational programs in the county.	19.0*	15.6*	17.9*	18.7*	15.5*
20. Publicizing results of effective educ. programs which have been conducted within the county.	16.3#	14.6#	18.5#	16.6#	15.8#
21. Difficulty in scheduling joint meetings--teachers are tied up during the day and agents in the evening.	16.6	15.5	15.2	16.2	14.2
22. The views passed down from state levels, either for or against cooperation.	16.0	14.4	15.3	15.7	14.8
23. Lack of clarity in where we should stand as prescribed by Smith-Leaver and Smith-Hughes acts.	16.0#	12.7#	15.5#	14.8#	13.8#
24. Youth programs seem to be deterrents to cooperation due to 4-H boys dropping out to join FFA.	12.1	13.5	12.2	12.2	14.0
25. Working out standards & criteria for evaluation of all adult work being conducted within our county.	14.1	15.8	17.2	16.0	15.2
26. Change in the need and the demand posed by adult students in our area today.	17.9	14.9	17.5	17.2	15.8
27. Recognition of the complementary roles of voc. agri. and extension.	17.0	15.9	17.5	16.2	13.7

*Significant at .05 by the Kruskal-Wallis test.
#Significant difference between groupings at .10, Kruskal-Wallis test.

questionnaire: personal factors, activites relating to planning and conducting educational programs, and evaluation factors.

Both teachers and agents felt activities relating to conducting meetings provided the best framework for cooperation. The respondents recognized opportunities for cooperation when: agents or teachers with special abilities were consulted in problem situations, joint demonstration projects were conducted during field days, committees representing both groups discussed adult education community needs, and both the agent and teacher perceived themselves as serving all of the residents in the county including the rural youth.

Communication between the two groups is needed. The respondents suggested both groups should discuss the failure or success of educational programs with each other. Newspaper publicity, according to this study, could result in better understanding providing it was not "glory seeking" on the part of either the teacher or agent.

Both groups recognized the changing educational needs of adults as an area for joint cooperation. Asking one another to serve on an advisory council would be an excellent way to encourage cooperation for adult classes.

No significant difference existed between younger and older teachers with agents views toward cooperation; although, the younger teachers with the least amount of experience viewed the activities with a more positive attitude. The respondents' level of education as measured by their college degree held had little to do with their views toward cooperation. Master's degree persons had slightly more positive views.

Environment influences attitudes of cooperation between teachers and agents. Highly populated areas appear to be a fertile ground for joint activities. Teachers and agents from metropolitan counties viewed personal factors as having a more positive effect on cooperation than teachers and agents from rural areas. The most negative effect of an activity on cooperative action is the selfish concern of an individual for a false public image identified as "glory seeking."

Recommendations

The recommendations presented are opinions based on facts presented in this study.

1. Agents and teachers should work more cooperatively in their youth programs. The study showed the youth programs were a major controversial issue in relation to cooperation. If both agencies would try to overcome the problems in youth programs, further cooperation would surely follow in other areas.
2. Agents and teachers in the larger counties, due to the fact that they had more positive views toward cooperation, should set the pace in all areas regarding cooperation. If cooperation can be demonstrated to work effectively in larger counties, the smaller counties would in turn follow the edifying pattern.
3. The two agencies should consult one another in areas relating to program planning. Asking one another to serve in an advisory capacity on the other's advisory council would be the best way to be aware of the other's activities.
4. Considerable emphasis should be placed on cooperatively meeting the technological needs of adults. Adult education not only offers a challenge to educators but places increased demands upon them to keep citizens up-dated for employment needs.

A SELECTED BIBLIOGRAPHY

Allison, David E. "Factors Related to Developing Young Farmer Programs in Oklahoma." (Master of Science Problem, Oklahoma State University, 1961).

Bryant, Bert, Jr. "A Study of Opinions and Attitudes Expressed by County Extension and Vocational Agriculture Teachers in Oklahoma Regarding the Nature and Extent of Desirable Cooperative Working Relationships." (Master of Science Problem, Oklahoma State University, 1965).

Cardozier, V. R. "Young Farmer Education as Viewed by School Superintendents, Principals, Teacher Trainers, and Supervisors of Agricultural Education." Progress Report of the National Young Farmer Study, United States Department of Health, Education, and Welfare, Division of Vocational Education, Washington 25, D. C., 1962, p. 18.

Henderson, Carwin E. "Methods of Organizing, Administering, and Conducting Adult Farmer Classes in Northeastern Nebraska." (Master of Science Problem, Oklahoma State University, 1952).

Knowles, Malcolm S. *The Adult Movement in the United States*. New York: Holt, Rinehart and Winston Company, 1962.

Miles, Matthew B. *Learning to Work in Groups*. New York: Bureau of Publications Teachers College, Columbia University, 1959.

National Education Association. *Cooperation Principles and Practices*. Eleventh Yearbook. Washington, D.C.: The Department of Supervisors and Directors of Instruction, 1938.

Omar, Ahmed M. "Working Relationships of County Extension Agents and Teachers of Vocational Agriculture in Michigan." *Dissertation Abstracts*, Vol. XXV Pt. 2, (August, 1964).

Peterson, J. C. "Agents and Teachers Cooperate." *Extension Service Review*, 9:90 (June, 1934), 9.

Shiner, Earnest. "O.S.U. Extension Has a New Look." *The Oklahoma Farmer Stockman*, 79:1 (January, 1966), 9-44.

Stevens, Glenn Z. "Young Farmer Associations." The Young Farmer Magazine, Vol. I, No. III (Spring, 1955), 2.

The Adult Education Association of the U.S.A. *Adult Education*. A new imperative for our times. U.S.A.: The Adult Education Association, 1961.

VT 001 269
Safety in the Drafting Room. Safety Education Data Sheet, no. 95

Noll, Robert F.
National Safety Council, Chicago, Ill.
Pub Date - 64
MF AVAILABLE IN VT-ERIC SET 4p.

*SCHOOL SAFETY, *ACCIDENT PREVENTION, *DRAFTING, *INDUSTRIAL ARTS, *SCHOOL SHOPS,

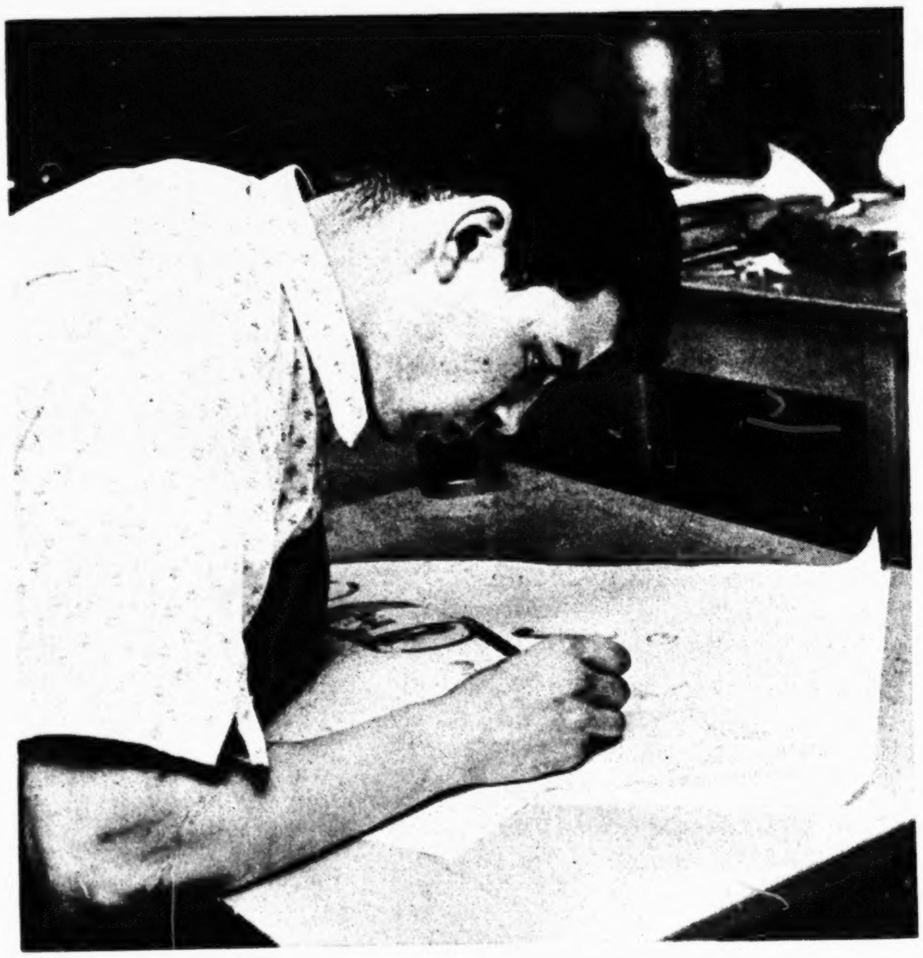
School shop teachers are growing more safety conscious and increasingly aware that they may be legally liable for injuries in schools. Little information is available on accident rates and recommended safety practices in school drafting rooms. Thirty teachers responded to a survey of 45 Arizona high school drafting teachers. Twenty-two taught safety as the need arose and recalled accidents involving minor injuries in their classes. These teachers listed room environment, classroom equipment, individual drafting equipment, and student behavior as hazards. Some administrative responsibilities are provision of adequate facilities and provision of competent teachers. Teacher responsibilities include--safe positioning of equipment, provision of emergency plans, and maintenance of proper discipline. Some student responsibilities are proper use of factilities and equiment, avoidance of horse play, and caution in handling chemicals. This article is a reprint from "Safety Education," March 1964 and is available as 429.04-95 for 68 cents from National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611. (EM)

VT 001 269

ED022065

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.



"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY National Safety Council
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

SAFETY IN THE DRAFTING ROOM

safety education data sheet no. 95

The Problem

1. School shop teachers are, in general, growing more safety conscious. For one thing, they are increasingly aware that they may be held legally liable for injuries resulting from a shop accident. In addition, expanding enrollments in shop courses have resulted in a wider range of students than ever before. The more pronounced variations in age, mental ability and mechanical aptitude among students have caused more emphasis to be placed on teaching them to work safely.

2. The literature on school shop safety contains a wide variety of material pertaining to the more hazardous shop areas, especially those in which students use grinding, cutting, bending or shaping tools. However, there is very little information on accident rates and recommended safe practices for the school drafting laboratory.

3. A small survey, in which a questionnaire was sent to 45 drafting teachers in 30 central Arizona high schools, was made by the author in an attempt to gather some information on the subject. Thirty teachers answered the questionnaire, a 67 per cent response.

4. One survey question asked teachers how they treated safety material: "Do you cover drafting room safety a) as a separate lecture topic? b) as the need arises? c) as part of an over-all shop safety program? d) not at all?" Seventy-five per cent of those replying answered that they taught safety material as the need arose. Some additional comments

This data sheet was prepared by Robert F. Noll, Dept. of Engineering, Phoenix College, Phoenix, Arizona.

VT001269

NATIONAL SAFETY COUNCIL
425 North Michigan Avenue, Chicago, Ill. 60611

Copyright 1964

were: "Learning is more meaningful when hazardous practices are cited when they happen." "Safety instruction should be given along with instruction in the use of instruments."

Accidents

5. Thirty-seven per cent of those responding to the survey recalled accidents to drafting students that had happened during their teaching experience. All the incidents involved only minor injuries.

a. Several teachers reported accidents involving divider points, razor blades, T-squares and ammonia burns. The injuries most frequently reported were punctures that had resulted from mishandling pencils or dividers.

b. Some incidents involved classroom equipment. One teacher, for example, reported an accident in which a student had cut his fingers on a metal locker.

c. Horseplay and poor classroom conduct accounted for falls and other injuries. In one case, a student who was swinging himself with his arms between two high drafting tables slipped and fell, catching his ear on the edge of a table and cutting it severely.

d. The importance of proper location of equipment was highlighted by this case: A student was working at a reproduction machine which was located near an open classroom window. At this school, the window sashes project inward, instead of outward as in most buildings. As the boy bent down to throw some scraps into a nearby wastebasket, he struck his head on a sharp corner of the projecting steel window, inflicting a painful gash in his forehead.

Hazards

6. The survey asked teachers to list drafting room hazards. They named these hazards involving *room environment:*

a. Crowded conditions
b. Poor arrangement of equipment and student work areas
c. Poor lighting and inadequate temperature controls
d. Narrow aisles

7. Teachers listed these hazards involving *classroom equipment:*

a. Desks and drafting tables with sharp corners and adjustable tops
b. Reproduction equipment (improper handling)
c. Audio-visual equipment (improper handling)
d. Electrical outlets and electric equipment
e. Ammonia (burns, fumes, improper containers)
f. Paper cutters and trimmers, scissors, knives, razor blades
g. Poor storage facilities for equipment
h. Metal lockers with sharp edges or corners
i. Glass in lamps and reproduction machines
j. Uncapped drafting stool legs
k. Tape and paper dispensers

8. These are the hazards that were associated with *individual drafting equipment:*

a. Divider points, pencil points, paper cutters and chemicals (These were named as hazards on 85 per cent of the returns)
b. All pointed equipment, including triangles
c. Razor blades and knives
d. T-square heads and blades

9. A number of the hazards mentioned involve *student behavior:*

a. Poor classroom attitude
b. Lack of respect for others
c. Horseplay
d. Leaning back on stools
e. Leaving drawers open
f. Using, passing and carrying equipment improperly

Responsibility for Safety

10. Part of the survey asked teachers to suggest important factors in drafting room safety. They responded with a number of excellent ideas which, taken together, may serve as a useful guide for establishing a safety program for the drafting room.

11. The following are *administrative* responsibilities:

a. Provide adequate facilities for proper conduct of an effective drafting program.

These include a classroom large enough to accommodate students without crowding; modern, up-to-date equipment and working conditions that meet good industrial standards.

b. Provide adequate facilities for good lighting and temperature controls.

c. Provide a competent teacher who is well prepared academically and is able to cope with classroom problems.

12. These elements are the responsibility of the *teacher:*

a. Provide a well organized, progressive instructional program that fully challenges all students, thus eliminating free time—when horesplay and unsafe acts commonly occur.

b. Provide a well planned clean-up program with individual assignments of specific duties. (It's a good idea to rotate duties weekly.)

c. Provide a program to engender good student attitudes.

d. Provide continual instruction and frequent check-ups on the safe use and proper care of drafting tools, material and equipment.

e. Provide adequate instruction in the safe use and proper care of chemicals and mechanical equipment used in blueprint or blue line reproduction.

f. Provide proper control of lighting and temperature in the classroom.

g. Maintain proper discipline.

h. Maintain a program for proper and safe storage of materials.

i. Use teaching techniques that enable maximum individual assistance, thus reducing student movement around the room in search of help from classmates.

j. Locate equipment in safe places, easily accessible to students.

k. Instruct students in when and how to use fire extinguishers and make sure they know the locations of those nearby.

l. Provide plans for students to follow in emergency situations.

m. Provide an accident reporting system which lists every shop mishap and can be used to analyze the effectiveness of your safety program.

n. Provide safety education as an integral part of drafting training.

13. Here are *student* responsibilities for safety:

a. Keep all legs of the drafting stool on the floor. Leaning back, sliding and tilting the stool are dangerous practices.

b. Use sharp-pointed instruments, such as dividers and pencils, with proper care; use them only for the jobs that they are designed to do.

c. Use such things as trimming shears, paper cutters and T-squares only in the manner in which they are intended. Although such tools are not dangerous in themselves, misuse can make them hazardous.

d. Carry pointed items in a safe manner, never in pockets.

e. Care for your own equipment and see that it is kept in good working condition. Be sure it is stored properly when not in use.

f. Keep drawers and lockers closed, with keys removed, at all times. Be sure to close drawers after opening them.

g. Avoid moving around the drafting room, except when necessary. Always walk slowly and watch your step.

h. Avoid horseplay. Try to develop the kind of working habits and general conduct you would expect of a draftsman in a business office.

i. Use reproduction equipment with proper care and only after you have been instructed in its use and have secured permission to operate it from your teacher. Follow all safety precautions when handling chemicals used in the reproduction process.

14. The school drafting room is a relatively safe place to work if students follow safe practices. Teachers who are safety conscious themselves generally can instill in their students an awareness of accident hazards and a willingness to follow safe practices.

Source Materials

15. Kigin, Denis J., *Teacher Liability in School Shop Accidents.* Prakken Publications, Ann Arbor, Mich. 1963.

16. Safety Education Data Sheet No. 64: *Safety in the Graphic Arts Shop.* National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611.

Safety Education Data Sheets available are:

#429.04-
-19 Alcohol and Traffic Accidents
-78 Amateur Electricians, Safety for
-26 Animals, Domestic
-37 Animals in the Classroom
-94 Archery, Safety in
-57 Auto Shop (Rev.), Safety in the
-66 Baby Sitting (Rev.)
-49 Bathroom Hazards
-1 Bicycles
-18 Camping
-14 Chemicals
-59 Chemistry Laboratory, Safety in the High School
-86 Cigarette Fire Hazards
-80 Counselors and Helpers in Summer Camps
-6 Cutting Implements
-68 "Do It Yourself," Safety in
–95 Drafting Room, Safety in the
-9 Electric Equipment
-87 Electrical Shop, Safety in the (Rev.)
-34 Electrical Storms, Safe Conduct in
-5 Falls (Rev.)
-60 Farm Mechanics Shop (Rev.), Safety in the
-3 Firearms
-25 Fireworks and Blasting Caps (Rev.)
-44 Fishing, Hook and Line (Rev.)
-12 Flammable Liquids in the Home
-61 Floors in the Home
-20 Gas, Cooking and Illuminating
-50 General Metals Shop, Safety in the (Rev.)
-64 Graphic Arts Shop, Safety in the
-81 Gun Clubs: Their Organization and Activities
-22 Gymnasium (Rev.). Safety in the
-52 Highway Driving, Rules, Precautions

#429.04-
-43 Hiking and Climbing (Rev.)
-91 Home Lighting
-41 Home Workshops
-42 Horseback Riding
-62 Iceboxes and Refrigerators, Hazards of Discarded
-79 Industrial and Vocational Education Programs, Coordinating Safety in
-70 Kites and Model Airplanes, Safety with (Rev.)
-23 Laboratory Glassware
-7 Lifting, Carrying and Lowering Inanimate Objects (Rev.)
-53 Machine Shop (Rev.), Safety in the
-2 Matches (Rev.)
-36 Motor-Driven Cycles (Rev.)
-55 Motor-Vehicle Speed (Rev.)
-31 Night Driving
-16 Nonelectric Household Equipment
-82 Office Safety
-65 Part-Time Jobs: Food Handling, Safety in
-13 Passenger Safety in Public Carriers
-10 Pedestrian Safety
-92 Pesticides, Safe Use of
-29 Play Areas
-69 Playground Apparatus
-74 Playground Surfacing
-8 Poisonous Plants (Rev.)
-35 Poisonous Reptiles
-21 Poisons, Solid and Liquid (Rev.)
-93 Promoting Safety Through School Newspapers
-24 Public Assembly, Places of
-51 Pupil Excursions, Safety in
-38 Railroad Trespassing

#429.04-
-11 School Buses—Administrative Problems (Rev.)
-63 School Bus Safety: Educating Pupil Passengers
-73 School Bus Safety: Operating Practices
-67 School Dramatic Productions
-47 School Fires (Rev.)
-85 School Lunch Room, Safety in the
-40 School Parties
-83 Sheet Metal Shop, Safety in the
-17 Sidewalk Vehicles
-84 Skiing Safety
-28 Small Craft
-71 Sports: Baseball, Safety in
-77 Sports: Basketball, Safety in
-72 Sports: Football, Safety in
-75 Sports: General Practices, Safety in
-54 Summer Jobs: laborers, home yard, service-stations
-45 Summer Jobs—Farm
-27 Swimming
-15 Tools, Hand
-4 Toys and Play Equipment
-89 Track and Field Events
-33 Traffic Control Devices
-48 Unauthorized Play Spaces
-88 Vision and the Driver
-76 (Bad) Weather Conditions Safety in
-39 (Bad) Weather: Hazards, Precautions, Results
-90 Wearing Apparel, Flammability of
-56 Welding and Cutting Safely (Rev.)
-30 Winter Driving
-32 Winter Sports
-58 Winter Walking (Rev.)
-46 Wood Shop, Safety in the

Data sheets from SAFETY EDUCATION are available from the National Safety Council. 10 to 99 copies, $.07 each. Lower prices for larger quantities. Order by stock #429.04-and the title and number of the data sheets. Complete set of data sheets—$4.75. All prices are subject to a 20 per cent discount to N.S.C. members and schools, colleges, universities and public libraries.

Reprinted from SAFETY EDUCATION, March, 1964 Stock No. 429.04-95

2M36409 (Printed in U.S.A.)

VT 001 372

Vocational Education in California, 1964-65, Annual Descriptive Report for the Fiscal Year Ended June 30, 1965.

California State Dept. of Education, Sacramento
Pub Date - 66
MF AVAILABLE IN VT-ERIC SET. 125p.

*VOCATIONAL EDUCATION, *PROGRAM DESCRIPTIONS, *ANNUAL REPORTS, AGRICULTURAL EDUCATION, BUSINESS EDUCATION, HOME ECONOMICS EDUCATION, INDUSTRIAL EDUCATION, TRADE AND INDUSTRIAL EDUCATION, HEALTH OCCUPATIONS EDUCATION,
California,

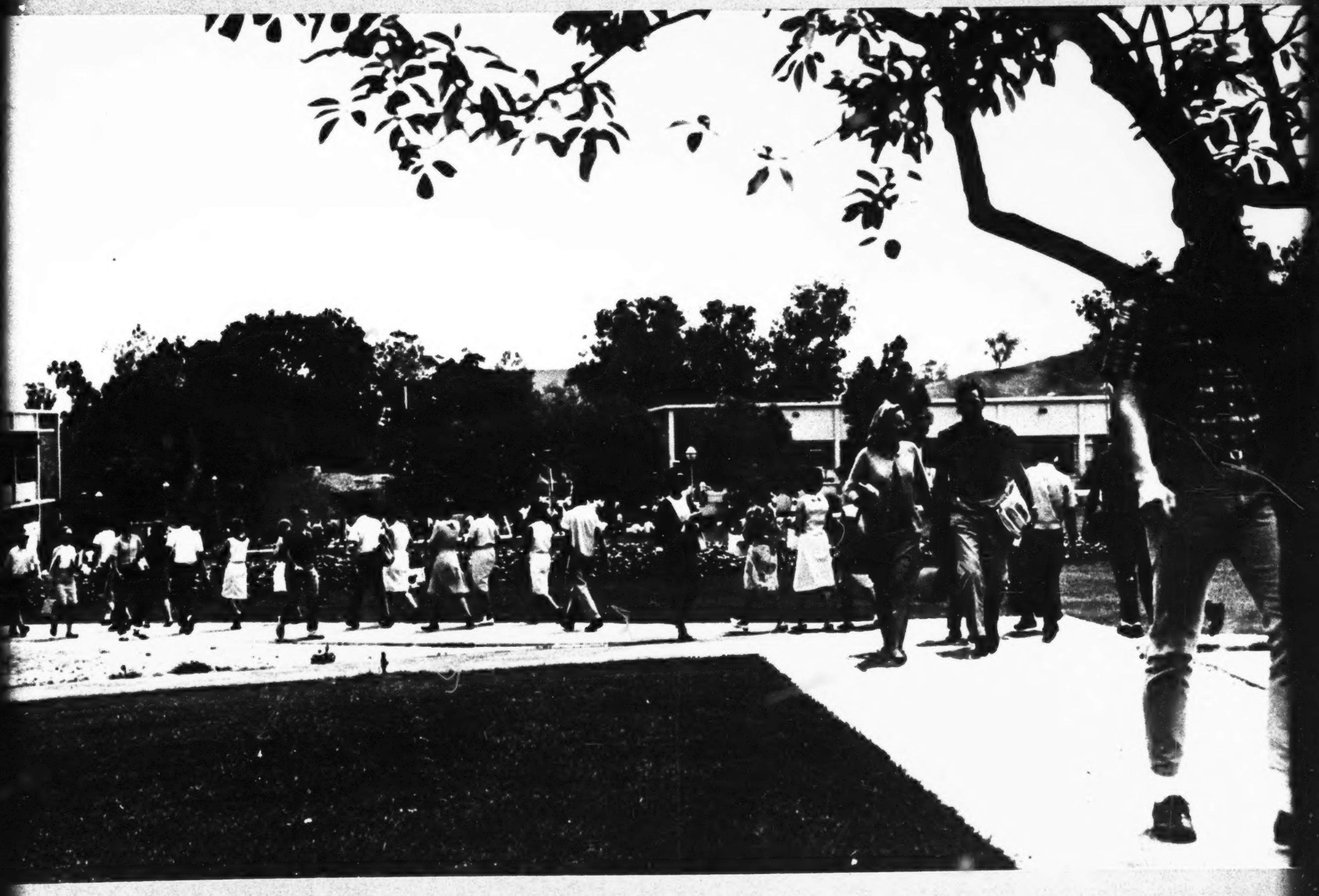
This review of federally aided vocational programs in agriculture, business, homemaking, and industrial education describes programs in California by presenting their focus, changes, features, and achievements. Some of the year's outstanding general achievements were (1) The provisions of the new Vocational Education Act were implemented in several hundred school districts, (2) The largest vocational education enrollment in California history was attained--125,090 in grades 9-12, 64,980 in grades 13-14, and 261,722 in adult classes, (3) The Manpower Development and Training Act implementation continued with the operation of hundreds of training classes for thousands of unemployed persons and with gainful employment of at least 75 percent of the trainees, (4) A specialized staff unit was created to provide concentrated attention to the vocational education programs of California's 80 junior colleges, (5) A staff organizational pattern was developed more in keeping with the emerging new horizons and expanding purposes of vocational education, and (6) A research coordinating unit was initiated for assisting school districts in research and dissemination of research findings. (EM)

VT 001 372

ED022065

~~001476~~

VOCATIONAL EDUCATION IN CALIFORNIA 1964-65



ANNUAL DESCRIPTIVE REPORT FOR THE FISCAL YEAR ENDED JUNE 30, 1965

VT01372

CALIFORNIA STATE DEPARTMENT OF EDUCATION
Max Rafferty- Superintendent of Public Instruction
Sacramento 1966

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

VOCATIONAL EDUCATION IN CALIFORNIA 1964-65

AGRICULTURE

BUSINESS

HOMEMAKING

INDUSTRIAL

FOREWORD

The program of vocational education in the United States has been served well by a long-existing plan of cooperation between the states and the federal government. Federal financial assistance has been a significant part of this joint undertaking, providing incentives to states and school districts the country over to invest their own funds in promoting, developing, and maintaining appropriate programs of occupational preparation for both youth and adults. This long-term cooperative arrangement was further strengthened in 1964-65 by the provisions of the Vocational Education Act of 1963, Public Law 88-210.

The United States Office of Education requires, as a part of this cooperative plan, that a written report be made annually by each state, describing its progress in vocational education. This is the descriptive report for California for the year 1964-65.

Max Rafferty

Superintendent of Public Instruction

PREFACE

This descriptive report of the California vocational education program has been developed in general conformance with an outline provided by the United States Office of Education. It supplements the official financial and statistical reports by presenting an informal review of important developments and trends with a coordinated picture of the program as a whole.

The primary emphasis of this report is on state-level operations and statewide developments--those phases of the vocational education program for which the Department of Education is primarily responsible. Only incidental mention is made of activities that took place in the hundreds of school districts involved in this program; yet, it should be remembered that these activities were the most significant of all, for they occurred at the level where the training was actually provided.

Although this report is prepared primarily for the United States Office of Education, it may also prove useful to all other persons with special interest in and responsibility for California's vocational education program.

J. GRAHAM SULLIVAN
Associate Superintendent
of Public Instruction
and Chief, Division of Instruction

WESLEY P. SMITH
Director
Vocational Education

CONTENTS

Page

STATE ADMINISTRATION AND DIRECTION

- An Overview 1
  - The Work Force 1
  - Education 2
  - Social Change 2
- Vocational Education in Action 3
  - Major Strengths 3
  - Major Weaknesses 4
- Outstanding Features of the 1964-65 Program 5
- The Task for Vocational Education 6
  - Persons to Be Served 6
  - Occupations to Be Served 7
  - Areas to Be Served. 7
- Program Achievements in 1964-65 8
  - High School Youth 8
  - High School Graduates 8
  - Dropouts 8
  - Adult Workers 9
  - Persons with Special Needs 9
- The Vocational Education Act of 1963 9

AGRICULTURE

- Change and Its Impact 11
- Key Factors in Agriculture 12
  - Land 12
  - Labor. 13
  - Production 13
  - Markets. 14

Page

Agricultural Education 14
  Bureau Responsibilities. 14
  Program Objectives 15

Federal Laws 15

California's Agricultural Work Force 16

Bureau Action 16
  Workshops and Inservice Programs 16
  Skills Week Workshops at San Luis Obispo 17
  Course Improvement at Biggs 17
  Marketing School at Los Angeles 17
  Humboldt Forestry Workshop 17
  Teacher Education Materials 17
  CATA Meetings 18
  School Visitation and Evaluation 19
  Consultant Services 19
  Advisory Committees 19
  Participation in Conferences and Meetings 21
  Cooperative Activities 22

A Year of Progress 23
  Instructional Programs and Related Activities 23
  Training and Retraining Programs 25
  Adult Classes in Agriculture 25

Vocational Education Act of 1963 26

The Passing of the Bracero 26

Youth Organizations 26

The Demand for Qualified Teachers 27

Research and Study 28
  Agricultural Technicians 28
  Conservation Project 29
  Farm Foremen 29
  Ornamental Horticulture 30
  Junior Colleges 30

Pilot and Experimental Programs 31
  Training for the Mentally Retarded 31
  Farm Machinery Training 32
  Ornamental Horticulture 32

Job Placement and Followup 32

Adjustment to Change 32

Program Interpretation and Promotion 33

Leadership 34

Facilities for Agricultural Education 35

Research Needed 36

Vocational Education Act of 1963 36

Page

- Manpower Development and Training Act 37
- Smith-Hughes Act 37
- Plans for the Future 37

BUSINESS

- Change and Its Impact 39
- Objectives, Terminology, and Laws 39
  - Objectives of Business Education 40
  - Terminology of Business Education 40
  - Federal Laws and Business Education 41
- California's Business Work Force 42
- Problems Faced by Business 42
- Responsibility and Action 43
  - VEA Conference 43
  - Contractual Agreements 43
  - Teacher Education Materials 43
  - Standard Entry Job Requirements 44
  - MDTA Regional Conferences 45
  - Workshop for Distributive Education 45
  - Conferences to Establish Sound Employer-School Relationships 46
  - Cooperative Activities 48
- A Year of Progress 52
  - Distributive Education 52
  - Business Data Processing Education 54
  - Office Education 55
- Manpower Development and Training Act 57
  - Effectiveness of MDTA Program 58
- Influence of Vocational Education Act of 1963 59
- Growth of Business Education 60
  - Growth Projection 60
  - Deterrents to Growth 61
- Teacher Training and Recruitment 61
  - Preemployment Training 61
  - Inservice Training 61
  - Recruitment of Teachers 62
- Research Studies 62
- Adjustments to Change 62
- Challenge and Change 63
  - Program Interpretation and Promotion 63
  - Studies 64
  - Experimental Programs 64
  - Projected Program Activities 65

Page

HOMEMAKING

Change and Its Impact 67

Context and Goals of Home Economics Education 67

Statewide Services 69

A Year of Progress 69
  Growth in Vocational Homemaking 69
  Senior Homemaking 76
  Home Projects 77
  Gainful Employment Education 77
  MDTA Projects 80
  Adult Education 81
  The Sears, Roebuck Foundation Projects 83
  Future Homemakers of America 84
  Community-Service Project Program 84
  Chapter Service Project 84
  Inservice Teacher Education 85
  Preservice Teacher Education 86
  Instructional Materials 87
  Experimental Programs 87
  Program Interpretations and Promotion 88
  Leadership 89
  Pilot Programs 90

Looking Ahead 92
  Challenge and Change 92
  Studies Needed 93
  Projected Program Activities 93

INDUSTRIAL EDUCATION

Change and Its Impact 95

The Context of Industrial Education 95
  Goals 96

California's Industrial Work Force 97

California's Industry and the Nation 97

Statewide Services 98
  Workshops and Inservice Programs 98
  Consultant Services, Advisory Groups, Conferences 98
  Instructional Materials 100

A Year of Progress 101
  Trade and Technical Education 102
  Peace Officers' Training 102
  Fire Training 104
  Apprenticeship Training 105

Health Services Education 106
  Nursing 107
  Dental Hygiene 107

Page

- Dental Assisting 107
  - Dental Technology 107
  - X-ray Technology 107
  - Medical Assisting 107
  - Medical Record Librarianship 108
  - Opthalmic Optics 108
  - Dietetics 108
  - Sanitation Technology 109
- Occupational Competency Examination 110
- Research and Studies 110
  - A Study of the Aviation Mechanic's Occupation. 110
- Adjustments to Change 111
- Characteristics and Objectives of Industrial Education 112
  - Characteristics 112
  - Objectives 113
- Challenge and Change 114
- Legislation 115
- New Industrial Education Credential 115
- High School Industrial Education 115

LIST OF TABLES

Page

STATE ADMINISTRATION AND DIRECTION

Table 1--Total Enrollments and Enrollments in Vocational Education by Educational Level, 1964-65 7

BUSINESS

Table 1--Enrollment in Distributive Education Classes 53

Table 2--Enrollment in Business Classes for Adults 53

Table 3--Growth of the Training Program for Business Data Processing 54

Table 4--MDTA Business Training Programs 58

HOMEMAKING

Table 1--Comparison of Selected Characteristics of the Two Programs in Home Economics Education Offered by California Schools 68

Table 2--Educational Services and Activities of the Bureau of Homemaking Education, 1964-65 70

Table 3--Vocational Homemaking Education in California High Schools 1960-61--1964-65 75

Table 4--Vocational Homemaking Education Home Projects 1960-61--1964-65 78

Table 5--Supervision and Evaluation of Vocational Homemaking Education Home Projects 1960-61--1964-65 78

Table 6--Adult Homemaking Education Courses 1960-61--1964-65 82

Table 7--Adult Homemaking Education Enrollments and Teachers Employed in Programs 1960-61--1964-65 82

Table 8--Sears, Roebuck Classroom Projects Conducted in Schools Offering Vocational Homemaking Programs 1960-61--1964-65 83

Table 9--Chapters and Members of Future Homemakers of America 1960-61--1964-65. 84

Table 10--Scholarships Granted by Statewide Organization of Future Homemakers of America 1960-61--1964-65 85

STATE ADMINISTRATION AND DIRECTION

VOCATIONAL
EDUCATION
ACT-1963

WESLEY P. SMITH
STATE DIRECTOR
OF VOCATIONAL
EDUCATION

AN OVERVIEW

The vocational education program broke all prior records during 1964-65--in size, in scope, in status, and in results. This record growth was influenced significantly by other events in California.

California's population is now the largest of any state in the nation, exceeding also that of some 100 of the nations in the world. With 18,600,000 citizens today--a total increasing at the rate of 600,000 a year--California may expect a population of 21,700,000 by 1970; 30,000,000 by 1980; and 40,000,000 by the turn of the century.

The phenomenal population growth in California has been achieved during the longest peacetime period of sustained economic advance in modern history. Literally for millions, California is fulfilling its promise as the "golden state." The state's areas of leadership are many and varied. Its advanced industrial technology, its first-ranking productive agricultural enterprise, its leadership in world trade, its preeminence in the value of manufactured exports, its high employment level--in fact, its records or near records in nearly every economic activity--all combine to illustrate the vitality that characterized California's economy during 1964-65.

• • • The Work Force

As a pioneer in science and technology and a national leader in education, California has developed a large, proficient work force deployed throughout its production and service occupations. The number of employees in California during 1964-65 averaged 6,642,000, the highest in its history and nearly 200,000 more than the record in 1963. New employment records were set in almost every sector: agriculture, wholesale and retail trades, government, construction, communications, utilities, finance, real estate, insurance, and others.

The task of creating more jobs, however, and of raising skills high enough to reduce unemployment assumes the highest priority for the future. Nearly 4,000 new jobs must be developed every week merely to keep pace with the state's massive population growth. Under such pressures of population and economics, education has become the state's pride, promise, and, at times, its problem.

• • • Education

Education is California's biggest public industry, employing well over 150,000 people and costing approximately $4 billion in 1964-65. California's system of public education, by most measures the finest in the world, is characterized by change. Progressive advances continue to result from innovation, research, and experience. California is not reluctant to recognize its problems, and the problem-solving approach is evident everywhere in California education. Yet, as fast as modernizing adjustments have come, as widespread as has been the construction of new facilities, and as quickly as new efforts have been made to meet the special educational needs of all the people, the pace of change has still been too slow. Education in California has been influenced by such extraneous matters as deprivation in Appalachia and segregation in Mississippi. It has also been handicapped by a continuing shortage of qualified teachers, overloaded by burgeoning enrollments, often thwarted by an inadequacy of funds, and bedeviled by the complexities of accelerated change. In such circumstances, public education has been hard pressed to accommodate the increasing tasks imposed by the explosion of knowledge and by the mandate that all learning inequities be eliminated.

In spite of California's eminence in education, pockets of inadequacy plague California's educational system. An alarmingly high dropout rate, a mere beginning of compensatory education, the existence of too-small districts, the slowness of curricular revision, and an excessive student-teacher ratio are among the trouble spots that yet remain to be erased.

Nevertheless, modifications have been significant, progress has generally been achieved, innovations have become commonplace, and the twin goals of quality and equal opportunities have been universally accepted.

• • • Social Change

Wave after wave of technological advances have produced a "new" California in recent years. The change from a predominantly agricultural to an industrial society has been completed. California is now 90 percent urban. With nearly three-fourths of its population located in three great metropolitan areas, California is not only an urban state but also a metropolitan state.

Technological advances have been good for California. In the main, they have produced an affluent citizenry. In 1964-65 Californians earned more than ever before--both in aggregate and in per capita terms--and had more to spend after taxes.

Technological change has had measurable impact upon the social structure in California. It has caused dislocations in societal institutions. It has disrupted lives, families, and institutions. Hundreds of thousands of Californians are still denied an equitable share of the "golden state's" abundance. Sociological adjustments in California, as elsewhere, lag well behind technological advances. In 1964-65 this lag had profound effects on society. Ultimately, these effects probably will prove to make a greater impact than the industrial revolution did on feudal Europe. The gap between the affluent segment of society and the disadvantaged segment has widened in a manner that cannot long be tolerated.

In 1964-65 California dealt vigorously with these problems of inequality. One approach to a solution was the realistic recognition that equality of opportunity will forever be an illusion unless inequality in educational opportunity is eliminated; that poverty and deprivation are rooted in ignorance; and that the uneducated, the illiterate, and the unskilled can no longer be swept under society's rug.

VOCATIONAL EDUCATION IN ACTION

No year in this decade will likely match the excitement, the importance, and the promise created during 1963-64 by the enactment of Public Law 88-210; but for California, the 1964-65 year has been marked by greater accomplishment than during any period in the state's history. After a half-century of operation within the public school curricular structure, vocational education attracted the interest of more people, extended services to more individuals, and provided instruction in more locations than in any previous year. A surge of activity in vocational education numbered new programs by the hundreds, new enrollments by the thousands, and dissemination of information to interested millions of Californians. As never before, vocational education was accepted as essential to the state's economic strength. Evidence of this acceptance has been reported in every area: by business, by industry, by the legislature, by government agencies, by the State Board of Education, by the educational profession, and by the public in general.

• • • Major Strengths

It is an easy task to identify the major strengths that characterized vocational education in California during 1964-65. These strengths stood out in bold relief because they were everywhere. And they were as significant as they were apparent.

The dominant strength of vocational education was the indispensible cooperation and confidence of individuals, agencies, and organizations not directly involved in the detailed conduct of the vocational education program. These included the hundreds and hundreds of advisory committees; the thousands of school administrators; the members of the State Board of Education; the departments of Employment and Industrial Relations, the State Legislature; the Superintendent of Public Instruction; the staff of the Department of Education; the public press; members of hundreds of boards of trustees; and the boys and girls and the men and women who enrolled in new and expanded classes designed for occupational preparation.

Another strength was the ready proficiency of hundreds of school district personnel assigned the direct and immediate tasks of developing new and extended vocational education opportunities in the high schools, adult schools, and junior colleges of the state. Stationed throughout the state in positions of vocational education leadership, this unique middle-management group accepted the responsibility for the further development and the redirection of vocational education. Their competence, their alertness, their enthusiasm, and their readiness for service composed one of the enormous strengths of vocational education in California in 1963-64--and will for many years to come.

Any enumeration of strengths in vocational education must include the availability, the willingness, and the competency of thousands of teachers who provided the front-line instruction so essential to achieving the program's goals. Many teachers already proved by years of service participated in further self-improvement efforts and devised new curriculums. New teachers brought enthusiasm to their tasks. All were hard-pressed to accommodate both increased enrollments and expanded subject matter. The program achievements outlined in this descriptive report stem directly from the allegiance and diligence of these teachers.

• • • Major Weaknesses

A normal weakness in any fast-moving program, especially one of this magnitude, arises from the lack of time to evaluate. With so many new developments, the opportunity to pause and plan is curtailed. Inherent in any successful vocational education program is the evaluation of efforts, the measurement of the products, and the examination of objectives. To the degree that time does not permit such review, the program is handicapped--if not impoverished. Without question, one of the current major weaknesses in California's total program of vocational education is enmeshed in the bursting activity that has handicapped objective and thorough evaluation.

Coordination and planning are essential in such a massive program as the vocational education program in California, but these elements of efficiency have also been involuntarily submerged by the hivelike activity pervading every aspect of the program in 1964-65. Vocational education, to be of maximum efficiency, must be in complete harmony with current and future job requirements, must be precisely calculated to match employment trends, and must be immediately and conveniently available to meet the needs of both individuals and employers. To a moderate degree, the efficiency of vocational education has been impaired by a certain amount of inattention to detail that has been the consequence of too-rapid expansion.

The comparative absence of supportive attention to vocational education by the academic world represented by the collegiate institutions in California comprises an inherent weakness in the power and the potential of vocational education in this state. Colleges and universities seem nearly oblivious to the role they might play in the further development of this phase of public education. In fact, these institutions seem to have turned their backs upon vocational education. This is true regardless of need for assistance in teacher education and for curriculum advice; regardless of the growing interrelationships of subject matter disciplines with occupational proficiency; and seemingly regardless of the increasing reliance of the economy upon vocational education.

Not necessarily a disabling weakness, but certainly a frailty in the current vocational education program, is the noticeable lack of understanding by the majority of youth and adults of the program's real character, its rational purpose, its remarkable performance, and its basic operational elements. In a very real sense, the degree of understanding of the vocational education program is in no manner equal to the widespread interest in, and substantial support of, this instructional program. While such interest in, and concern for, its further development is no handicap to vocational education, its forward progress and its increased effectiveness will be in direct ratio to the rational nature of the influences that guide its direction.

OUTSTANDING FEATURES OF THE 1964-65 PROGRAM

The degree of progress in vocational education in California during 1964-65 can only be described as breathtaking. While a more detailed tabulation will be included in the following sections of this descriptive report, some of the year's outstanding features are the following:

- The provisions of the new Vocational Education Act, effective three months after the start of the year, were implemented in several hundred school districts.

  Without question, California became the first state to absorb throughout the state the benefits of Public Law 88-210 on a fully operational basis.

- A statewide conference on vocational education, the first of its kind in the nation, was staged in January, 1965. Nearly 1,000 California citizens participated in this conference, and they met with a single purpose: to suggest the dimensions of, and the directions for, the kind of a vocational education program so essential to the economic progress of this state.

- The Manpower Development and Training Act implementation continued, with the development, inauguration, and operation of hundreds of training classes for thousands of unemployed persons and with the gainful employment of at least 75 percent of the trainees.

- A specialized staff unit was created to provide concentrated attention to the vocational education programs of California's nearly 80 public junior colleges.

- Efforts were initiated to make a thorough analysis of the vocational education program through the conduct of a statewide study designed to redirect and improve the program so that it would more nearly match the current and future manpower needs of the state.

- A staff organizational pattern was developed more in keeping with the emerging new horizons and the expanding purposes of vocational education.

- A wide-reaching cadre of personnel was created and assigned to the exclusive task of local leadership, on both a county and school-district basis, for the further development and improvement of vocational education.

- The State Board of Education activated a regular standing committee on vocational education. The committee is composed of four Board members.

- Local, regional, and statewide lay and professional advisory committees, whose total membership exceeded 5,000 California citizens, were used increasingly.

- A research coordinating unit was initiated for vocational education. Its purpose is to assist school districts in research design, to identify research needs, to gather research results, and to disseminate information of research findings.

- The largest vocational education enrollments were attained in the long history of the program in California.

- Legislation was passed enabling future implementation of area and regional cooperation of school districts in the joint, shared use of physical facilities for vocational education, and expansion of the potentiality of use of private vocational education facilities in the state.

THE TASK FOR VOCATIONAL EDUCATION

Vocational education in California must perform a multiple mission: It must serve the occupational preparation needs of tens of thousands of individuals, youth and adults alike; it must satisfy the skill and knowledge requirements of thousands of occupations for entry jobs and for continuing job performance; and it must provide training opportunities in all areas and all communities of the state.

• • • Persons to Be Served

The persons who potentially can be served by vocational education must be counted in millions. In a state that already has nearly seven millions at work every day and that must make employable a quarter of a million new entrants to the work force every year, the task, in numbers, is tremendous. Approximately one out of ten of California's population is now able to depend upon four years of college education as preparation for occupations. The result is that no less than 90 percent of all job seekers and job holders are prospective recipients of the services of vocational education.

In the state's high schools (grades nine through twelve), in excess of one million youths are in daily attendance. More than 230,000 attend junior colleges as full-time students. Nearly 600,000 enroll annually in one or more adult education classes. To be added to the hundreds of thousands of these school-enrolled persons who require the services of vocational education are uncounted thousands who are out of school and seeking work or who are already in the work force.

In spite of the rising vocational education enrollments noted in this descriptive report, the fact remains that for every person in California who is presently being served by vocational education, at least three more could profit from such instruction.

Table 1
Total Enrollments and Enrollments in
Vocational Education by Educational Level, 1964-65

Educational level	Enrollment	
	Total	Vocational education
High school (grades nine through twelve)	1,063,229	125,090
Junior college (grades thirteen and fourteen)	238,562	64,980
Adult classes	587,094	261,722
Total	1,888,885	451,792

• • • Occupations to Be Served

It must be assumed that every occupational field can benefit from the services of vocational education. Currently, this is the situation in California, with operating instructional programs in the health occupations, agricultural occupations, trade occupations, distributive occupations, construction occupations, service occupations, industrial occupations, conservation occupations, technical occupations, recreation occupations, office occupations, protective service occupations, aerospace occupations, managerial occupations, and governmental occupations. Whatever the field of employment, vocational education services are either available or could be made available.

• • • Areas to Be Served

Vocational education services should be made available wherever people work and wherever they prepare for work. Population concentrations automatically produce the need for large clusters of vocational education services; and where the population thins, so do the opportunities for vocational education.

The mobility of population and the work force have influenced vocational education offerings. No longer, for example, should vocational offerings in high schools and junior colleges be exact reflections of the occupational opportunities in the immediate communities. Schools in the remote rural counties produce workers for the state's population centers. The absence of vocational preparation opportunities in such remote schools limits the employment opportunities of their graduates. Vocational education must be made available throughout the state.

PROGRAM ACHIEVEMENTS IN 1964-65

As already noted, 1964-65 was the year of great achievement in vocational education. Many of the specific details of such advances will be described in the following sections of this report, but quickly summarized, here are some highlights.

• • • High School Youth

Approximately 39,243 more high school youths were enrolled in federally aided vocational education classes in 1964-65 than in the prior school year. The grand total of 125,090 is thus 78 percent higher than the record-breaking enrollment of 70,149 of 1962-63. These new accomplishments involved increased enrollments in operating instructional programs and the establishment of no less than a hundred new programs throughout the state. This increase in enrollment resulted from the fact that many new occupations were served, many new communities were involved, many new teachers were employed, and many additional facilities were obtained. For the first time in two decades, the increase in vocational education matched the increase in total high school population.

• • • High School Graduates

California abounds in vocational training opportunities at the post-high school level. Created more than 50 years ago, nearly a hundred junior or "community" colleges now enroll more than 230,000 persons. In 1963-64 a total of 1,291 vocational courses were provided in these two-year, tuition-free segments of California's public school system. During that year, total enrollments of full-time and part-time students exceeded 100,000 persons.

• • • Dropouts

Although the opportunities for school dropouts to obtain vocational education services are extensive, the number of such youth who avail themselves of these services is quite small. Although at least 10,000 youths between the ages of fourteen and seventeen were not in school full time in 1964-65, fewer than 1,000 could be counted in any part-time school activity.

As school dropouts mature, however, their inclination to take advantage of vocational education opportunities increases. Nearly 6,000 non-high school graduates under the age of thirty-five, for example, were enrolled in Manpower Development and Training Act courses in 1964-65. In addition to those in full-time training, other thousands were participating in part-time adult vocational education programs offered by both junior colleges and adult schools. Approximately one half of California's total adult population has not finished high school. The enrollments in vocational education programs, however, do not reflect this fact, since the preponderance of persons who participate in vocational education actually attain high school graduation.

• • • Adult Workers

Realistic statistics that would convey the extent to which adult workers participate in vocational education opportunities are quite elusive. Hundreds of major California employers provide in-plant specialized training aimed at increasing worker proficiency. Also, private schools, colleges and universities, correspondence schools, and a variety of governmental and community schools make available a diversified array of post-high school educational opportunities. However, data from two sources confirm the rather extensive involvement of employed persons in vocational education offerings made available by California school districts do exist. During the 1964-65 year, 261,722 adults were enrolled in specific part-time programs that were financially aided by federal vocational education funds. During the same year, 44 percent of all the enrollments in public adult schools were in classes keyed directly to the attainment of occupational skills and knowledge. The purposes of these programs were to increase proficiency in the job presently held and to develop proficiency for a new or different job.

Although these enrollments of adult workers were the largest achieved to date, they represent less than 5 percent of the employed workers in California.

• • • Persons with Special Needs

The most favorable description of vocational education's contribution to the occupational preparation of persons who have "special needs" would still reveal a serious deficiency. To date, even with an augmentation of funds, only feeble and tentative efforts have been made to devise, develop, inaugurate, and operate occupational preparation programs geared to the specialized needs of both youth and adults who suffer handicaps that preclude entry into, or success in traditional patterns of, and approaches to, vocational education.

It must be stated, however, that to a large degree, the absence of specialized training programs for persons with special needs is paralleled by the absence of meaningful identification of the real needs of handicapped persons. Neither their numbers nor their handicaps have been sufficiently clarified for more than a somewhat cautious, experimental approach to program development. Nevertheless, the need appears to be urgent.

THE VOCATIONAL EDUCATION ACT OF 1963

Although the impact of Public Law 88-210, the Vocational Education Act of 1963, upon California's program of vocational education has already been noted briefly, this descriptive report for 1964-65 would be incomplete without a more extensive account of the profound effect of this federal legislation. Just as the Smith-Hughes Act of nearly a half century ago planted the seed for continuing and successful cooperative effort between the federal government and the state governments to strengthen instructional programs keyed to occupational preparation, the Vocational Education Act of 1963 provided the means to reap a long-hidden harvest of competency, knowledge, and experience in establishing and operating programs of job preparation. The dimensions of vocational education were expanded, the purposes of vocational education were widened, and the potentiality of vocational education was honored by this act. Even more significant than the quadrupling of funds was the flattering emphasis placed upon vocational education as one of the basic solutions to society's problem of keeping pace with technological progress.

In 1964-65, mainly because of the impetus of the Vocational Education Act of 1963, the program of vocational education in California advanced into a new era of development. Previously unserved occupations were assisted. The downward trend of vocational education offerings at the high school level was reversed. Traditional programs of training were transformed. Interdisciplinary approaches to curriculum development were restored. Experimentation became acceptable. Research attained a universal popularity.

In short, 1964-65 was an exciting period in the long history of vocational education in California, and the developments that occurred in that year foretell future contributions even more significant than those of the past.

AGRICULTURE EDUCATION

BYRON J. McMAHON
STATE SUPERVISOR

CHANGE AND ITS IMPACT

Agriculture, in common with other business and industry, has experienced rapid and continual change. This change has resulted in misconceptions and has raised questions as to what the term "agriculture" includes and implies. Some think of "agriculture" solely as "farming," and they use these two terms synonymously. Others regard agriculture as a single occupation in which persons with similar training perform identical tasks.

Agriculture is a broad category, of which farming or "production agriculture" is only one phase. Farming, in turn, is a group of occupations, with each occupation requiring specific skills and abilities, some similar and some dissimilar. Moreover, farming is the basic root from which grow all other phases of agriculture: distributing, processing, and service occupations.

These emerging concepts reflect the changes in agriculture which are occurring at an accelerated pace. Some of the more dramatic of these changes and their impact on agriculture are briefly described by the statements that follow:

- More people are employed in other phases of agriculture than in farming itself.
- Operational skills and managerial ability are essential requisites for success in farming.
- New agricultural occupations have emerged in the distribution, processing, and service areas.
- Application of science and mechanized equipment has transformed production agriculture.
- Efficiency of output and the productivity of farm units continue to improve.

- The rate of technological change in agricultural occupations makes it necessary to continue occupational training throughout the worker's career.
- The significant development of organizations and leadership services in agriculture has provided additional employment opportunities.

The magnitude of these changes emphasizes the importance of providing workers in the broad field of agriculture with the best possible educational opportunities. Agricultural education is required, not only to enable workers to acquire the new technical skills, abilities, and knowledge needed to assure an adequate supply of food and fiber for the nation, but also to acquire those fundamental abilities of leadership and citizenship needed by all citizens.

KEY FACTORS IN AGRICULTURE

The key factors in agriculture are land, labor, production, and markets.

• • • Land

California produces more food than many other states and does so from fewer acres of land. And the dollar value of the food and fiber produced is greater than that of any other state. However, the population growth of California's cities is so great that much of the best agricultural lands around the cities is being converted to homesites, and this is threatening the state's agricultural production leadership.

Land prices have risen steadily and are continuing to rise even though the increase cannot be justified on the basis of the land's productive capacity. Speculation, or a hedge against inflation, may be the basis; but regardless of reason, the rising prices have meant higher land costs to farmers and higher taxes due to increases in the assessed value of the land.

The land speculation belts that surround California's metropolitan districts--particularly Los Angeles, San Diego, and the cities around San Francisco Bay--prevent farm operations from being either progressive or long range. In one regional study, it was reported that no new agricultural land sales have taken place in Sonoma County for five or more years and that land with little prospective urban site value over the next 10 to 20 years was selling at two to ten times its value for farming.

The average size of California farms has increased. In 1963 the average size was 400 acres, about 58 percent larger than the average size in 1945. But this does not tell the whole story; for out of the approximately 99,000 farms, 6 percent contained three fourths of the total land in farms and 3 percent contained almost two-thirds of the total land in farms. The small family farm, Jefferson's dream and the pride of a growing nation, has certainly declined to a role of minor significance in California.

The increased production for the year had to result from greater efficiency in farming methods, for during the year a considerable amount of the choice farm land was taken out of production and converted to home sites, industrial plant sites, and freeways.

• • • Labor

As everywhere in the nation, farming in California continues to be a declining market for labor. Opportunities for new jobs are constantly developing in off-farm agriculture, but the agricultural industry cannot be expected to provide the two new jobs per minute needed to keep the available work force fully employed.

Farm labor contributes more than $3 billion to the gross state product. However, 75 percent of this amount is produced by one-fifth of the 67,000 commercial farms in California, and at the other extreme only 5 percent of this amount is produced by the two-fifths of the 67,000 commercial farms that have the lowest total sales.

These data help to explain why nearly half of all farm operators in California must also be employed on off-farm jobs or have incomes from sources other than their farms. Obviously, many of the operators of small farms, purchased their farms to live on in retirement and to operate as necessary to supplement their incomes.

The shortage in farm labor that plagued the farmer during 1964-65 was caused by the changed policy regarding imported farm labor. This shortage resulted in shifting to crops that require little hand labor or to those that lend themselves to mechanization.

• • • Production

California's high production per acre is achieved in large part through the combination of a temperate climate, which permits the production of two or even three crops per year on some acreage, the intelligent and diligent use of irrigation water, and the application of commercial fertilizers. Control of crop pests and noxious weeds and state restrictions which guard against the importation of plant diseases and parasites provide important aids to farm production. The use of highly developed mechanization also contributes to the high crop yield.

Most of California's food and fiber products are grown in its several vast level valleys, in which crop disasters have not occurred in modern times. These lands will produce a wide variety of crops and as a result are used to produce almost every crop that is produced anywhere in the temperate zones. Specialization is such that many farmers depend upon a single crop or livestock product for their total income; yet, because of shifts in market potentials, other farmers who have the knowledge and skills required to produce the different crops efficiently and successfully change their crops as necessary to secure the best market conditions.

• • • Markets

Migration to California of thousands of people who were attracted by the mild climate, high per capita income, and diverse employment opportunities has contributed and continues to contribute to a population explosion that has in large part resulted in urban growth, and this growth has forced major changes in the agricultural scene, especially in the marketing phase. Today, the agricultural industry must meet the ever-increasing demands of these urban areas for agricultural products, along with those of the markets for California products throughout the United States and foreign countries.

The expansion of California agriculture depends upon continued profits. For the fiscal year 1964-65 agricultural economists recorded a narrower margin of farm profit than for previous years. Farm prices remained relatively constant, only a few rising and a few falling until late in the year when a small general increase occurred, but farm expenses continued to creep up. The efficient producer continued to find farming profitable, but wide variation and sharp differentials existed in the price and profit statistics.

AGRICULTURAL EDUCATION

The agricultural education programs offered by California high schools and junior colleges are designed to provide basic training, which leads to employment in modern agriculture, in that group of vocations among which farming is primary, but which includes a wide variety of career opportunities dependent upon, related to, and serving the farm industry.

Generalizations regarding farming practices in the United States do not necessarily apply to farming in California, nor do generalizations regarding agricultural education in the United States necessarily apply in California because the agricultural industry in California differs in many ways from that of other states. The characteristics of the industry in California are of such a nature that the demands for agricultural education programs are much greater than in other states, and the programs offered are more varied because of the astounding number of different crops produced commercially and because of the problems posed in the total process from production to marketing each crop.

Just 15 years ago 10 percent of all California residents lived on farms, but today only 2.7 percent live on farms. And during the interval, productivity and farm receipts have risen steadily and farm employment has declined steadily. The agricultural scene in California has been changing, and today its pattern has become unlike the so-called traditional pattern of yesterday. These changes in the pattern are reflected in the agricultural education programs now offered by California schools; and as other changes occur, they will also be reflected.

• • • Bureau Responsibilities

The Bureau of Agricultural Education of the State Department of Education is responsible for the promotion of general agricultural education and for the leadership, direction, and supervision of vocational agricultural education. The basic difference between the two programs is that the general agricultural program is orientation-centered and the vocational agricultural program occupation-centered.

• • • Program Objectives

The agricultural education programs offered by California schools contribute in many ways to the goals of public education outlined in the report made by the Joint Interim Committee on Education of the California Legislature. The primary functions of the program are, however, to further the following objectives:

Objectives of General Agriculture

• • •

To develop understanding, appreciation, and interest concerning

- Living and growing things
- The importance of agriculture to every citizen
- Intelligent purchase and use of agricultural products
- The influence of agriculture on society
- The conservation of natural resources
- Opportunities in the agricultural industry

Objectives of Vocational Agriculture

• • •

To provide the agricultural competencies necessary to qualify the student for entrance into farming, for entrance into an agricultural occupation closely related to farming, or for entrance into an occupation in which training in agriculture is necessary

FEDERAL LAWS

The Bureau of Agricultural Education is generally responsible for improving instruction in agricultural education and, in addition, has specific responsibilities for direct supervision of programs which have developed as a result of the following federal acts:

1. Smith Hughes Act. The Smith Hughes Act, passed in 1917, was designed to provide for the promotion of vocational education; to provide for cooperation with the states in the promotion of such education in agriculture, the trades, and industries; to provide for cooperation with the states in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure.

2. George-Barden Act. The George-Barden Act, passed in 1946, provides additional support to the several states and territories and provides for greater flexibility in the use of federal funds to further develop vocational education.

3. George-Barden Act. Title III (Formerly Title VIII of the National Defense Education Act). Title III of the George-Barden Act provides assistance to the public schools in the field of Technical Education. This act has stimulated the development of educational programs designed to train persons for useful employment as highly skilled technicians in recognized occupations that require scientific knowledge in fields necessary for national defense.

4. Manpower Development and Training Act (MDTA). The Manpower Development and Training Act, passed in 1962, has a single overriding purpose--the elimination of unemployment that is caused by people not having the necessary skills to acquire and keep a job.

5. Vocational Education Act (VEA). The Vocational Education Act, passed in 1963, provides financial assistance in the field of vocational education to improve, strengthen, and expand an educational program that is designed primarily to train individuals for gainful employment in recognized occupations.

CALIFORNIA'S AGRICULTURAL WORK FORCE

California's agricultural work force in 1964 was estimated as 300,000, not including imported labor. This was approximately 6 percent of the total number of employed workers in the state. This small proportion of workers reflects the farm conditions today, particularly the mechanization of many operations and the development of one-crop large farms.

BUREAU ACTION

Agricultural education must be looked to as one response to the problem of unemployment, particularly among youth and unskilled workers. Entry level jobs are vanishing and more skills are being required at all levels of employment. The Bureau of Agricultural Education has responsibility for helping to solve the problems that are being created by population growth and shifts, specialized and mechanized farming, and the expansion of off-farm activities in the field of agriculture. How it is meeting these responsibilities is described in the following sections of this report.

• • • Workshops and Inservice Programs

In meetings conducted by the Bureau of Agricultural Education during the year, the focus of interest was upon skills workshops, the Vocational Education Act of 1963, MDTA program operation, advisory committee operation, and cooperative interagency programs.

• • • Skills Week Workshops at San Luis Obispo

The Skills Week Workshops held on the San Luis Obispo campus of California State Polytechnic College had an enrollment of 118 teachers. They participated in 14 workshops, most of which reflected the impact of mechanization and the necessity for scientific knowledge in actual agricultural life in California. The workshops were nursery operation fundamentals; advanced floriculture; orchard practices; harvesting equipment; advanced welding; electric wiring and motors; diesel engine tuneup; power equipment for ornamental horticulture; surveying for land grading; soil fertility, testing and water relations; advanced landscaping; pesticide safety; and use of audio-visual materials.

In addition to these workshops, there was a special agricultural field study tour to the San Joaquin Valley. The purpose of this tour was to provide the teachers, primarily those from Southern California, with an opportunity to obtain first-hand knowledge of modern operations, management practices, and the business operations of selected agricultural enterprises.

• • • Course Improvement at Biggs

A workshop patterned after a successful one held in 1964 was conducted at Biggs High School in Northern California to develop, revise, and update the local course of study in vocational agriculture. Each participating instructor returned to his classroom with a complete, new curriculum and with enthusiasm and determination to get the new curriculum into operation at once.

• • • Marketing School at Los Angeles

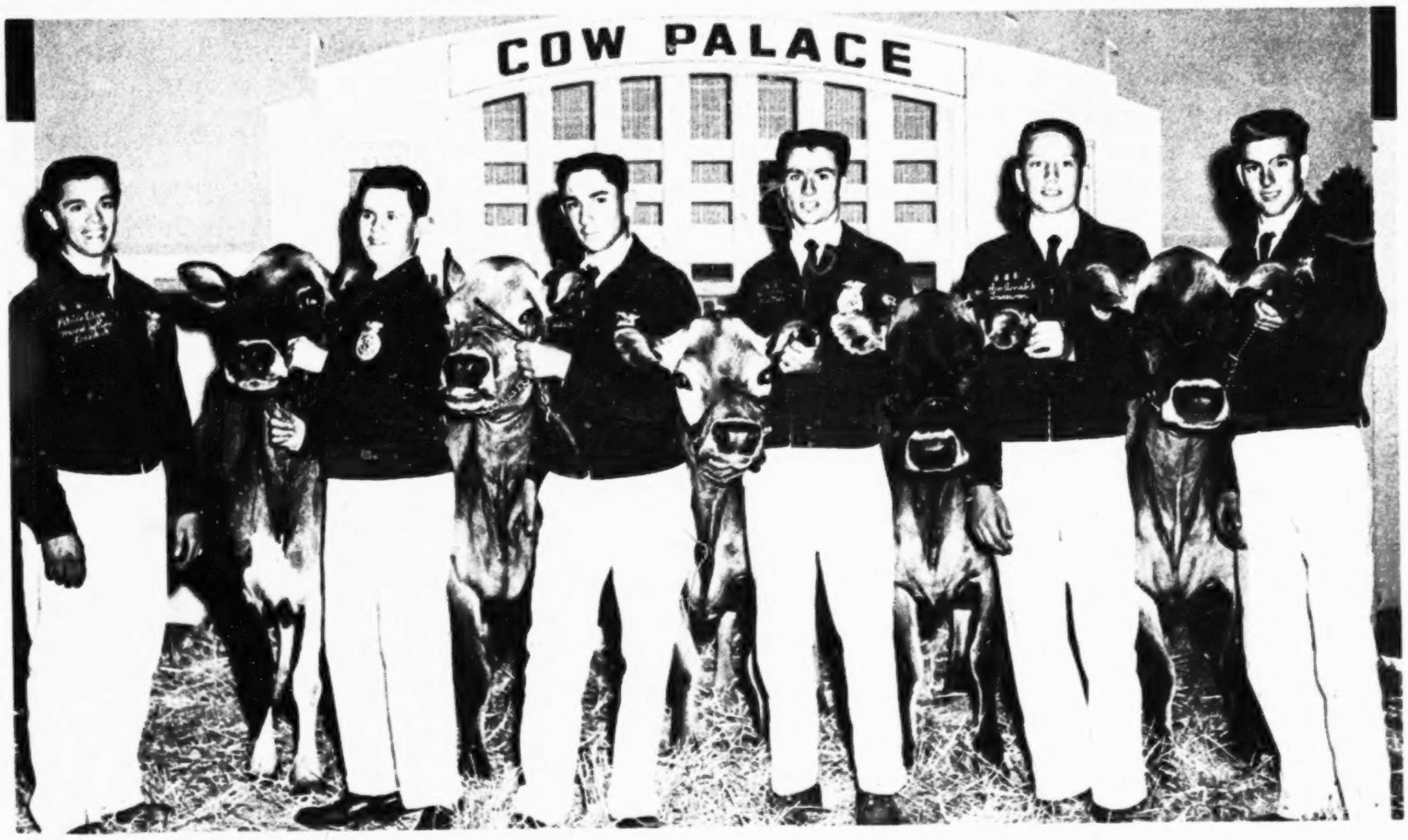
A group of 18 teachers participated in a one-week marketing school sponsored by Swift and Company at Los Angeles. The workshop deals with the buying, slaughtering, processing and sale of meat products.

• • • Humboldt Forestry Workshop

The Bureau worked jointly with the Redwood Region Conservation Association and Humboldt State College to provide a one-week workshop for 20 teachers, some of whom were teaching, or planning to teach, courses in forestry.

• • • Teacher Education Materials

A considerable quantity of instructional materials for use in the agricultural education program have been developed by the Bureau of Agricultural Education in cooperation with several different agricultural agencies. The surge of interest in new training programs for off-farm occupations has had a decided influence in determining the teacher education materials that have been developed, as well as those in preparation. Included among the publications are those pertaining to identification and use of ornamental trees and shrubs, diseases and pests of greenhouse plants, and pruning ornamental shrubs and broadleaf evergreens. However, the publications range from reports of studies made by technicians in agriculture to traditional production guides. Staff members of the San Luis Obispo campus of California State Polytechnic College, through assistance provided by the Vocational Education Act of 1963, developed instructional manuals and film strips on poultry anatomy, brooding management, grain recognition, farrowing of swine, grape production, and flower arranging. Other publications that have been made available are Beef Cattle Production, Use of the Level, Livestock Raising and Shipping, Oxyacetylene Welding, Crops and Soils, and Judging Kits for Beef and Sheep.



A champion group of dairy cattle was exhibited by the Los Banos chapter of the Future Farmers of America at the 1965 Junior Grand National Livestock Exposition held in San Francisco.

Future Farmers of America, the University of California at Davis, and the California Agricultural Teachers Association (CATA) also cooperated in the preparation and publication of materials. The latter group published six editions of the CATA News, while the Bureau published six editions of the California Vo-Ag Service Letter. Both publications are given statewide distribution. In addition, the 12-page magazine, California Future Farmer, is published eight times a year and sent to 14,000 persons. The magazine, California Young Farmer is published four times a year and sent to 1500 persons.

• • • CATA Meetings

The Bureau of Agricultural Education sponsors sectional, regional, and statewide meetings of the California Agricultural Teachers' Association. Members of the Bureau staff, working cooperatively with the officers of the CATA, schedule monthly meetings in each section of the state. Regional meetings are held twice yearly, and the annual statewide conference is held each year during the month of June. These meetings, in addition to providing opportunity for the CATA members to transact the business of the organization, provide in-service training by having guest speakers, panel discussions, and field study trips.

• • • School Visitation and Evaluation

As a routine function of the Bureau of Agricultural Education, each school offering vocational agriculture is visited by a regional supervisor, who works individually with the teacher of agriculture on matters such as curriculum revisions, lesson plan development, and supervised farming programs. In addition, regional supervisors participate in a number of program evaluations each year. These consist of an in-depth study of the school's program of vocational agriculture. The school administrators, members of the governing board of the school districts, agricultural instructors, and the regional supervisor are all involved in making the evaluations.

• • • Consultant Services

During the year, under contract to the Bureau of Agricultural Education, two ornamental horticulture specialists from California State Polytechnic College visited 140 high schools and junior colleges to consult with the agriculture teachers, school administrators, and members of the governing boards of the school districts. The one- to three-day visits were followed up by supplying the schools with curriculum materials; lists of instructional materials and facilities; other materials necessary for developing an ornamental horticulture program; and suggestions for in-service training.

Under this program, subject matter specialists in other areas of agriculture are made available by California State Polytechnic College to supplement the assistance available to schools from local specialists. The Bureau pays travel expenses for these specialists. Specialists in all phases of the agricultural industry are in demand; those in the areas of soils, ornamental horticulture, agricultural mechanics, and farm business management are in great demand.

• • • Advisory Committees

Advisory committees have made valuable contributions to the vocational education program offered by California schools, for their work has resulted in the improvement of all phases of the agricultural education program. This success may be attributed, at least in part, to the fact that the membership of the committees has included from various professions and occupations laymen who were familiar with local conditions and who had the confidence of their working associates and the respect of the general public. They were therefore in the best of positions to provide two-way communication and understanding between the school and the community. The advisory committees employed included the nine-man state committee and a large number of school and special-project committees.

The membership of the nine-man committee that advises the Bureau of Agricultural Education on a statewide basis consists of outstanding agricultural leaders, many of whom have had long experience as members of the governing boards of school districts and on local advisory committees. Each member of this committee represents a different, important segment of agriculture. The members make major contributions by each one reviewing during each meeting the newest scientific and mechanical developments in the enterprise in which he is principally engaged.

Local committees follow in varying degrees the procedure set out in the Guide for the Establishment and Conduct of Local Advisory Committees, a Bureau-developed publication which was revised during the year and distributed throughout the state.

Special Advisory Committees. In addition to the regular on-going advisory committees, large numbers of special committees were formed and used during the year:

- All school districts conducting special programs under the National Defense Education Act (NDEA) developed advisory groups.
- All programs under the Manpower Development Training Act (MDTA) to date have employed advisory committees.
- The requirements of the Vocational Education Act of 1963 (VEA) makes mandatory the use of advisory committees. Teachers developing new occupational training programs under the provisions of this act are counting heavily on the advice and talents of local specialists from the occupational field.
- A special advisory committee was developed to advise the Bureau of Agricultural Education concerning the California Young Farmer program. It is contemplated that a similar group will be formed during the coming year to assist with the Future Farmer program.
- The value of advisory committees becomes readily apparent when one studies the accomplishments made by the agricultural department of Armijo High School with the assistance of an advisory committee since the accomplishment in this instance is typical. During the 1963-64 school year, enrollment in vocational agriculture at Armijo High School dropped to an all-time low of 30 students, and the school administrators seriously considered discontinuing the program. An ad hoc advisory committee consisting of school administrators, members of the board of trustees, and representatives of the Bureau of Agricultural Education convened to consider the problem. A new agricultural teacher was employed, and a permanent advisory committee was appointed because of advise from this group. The new teacher, with the cooperative support of the advisory committee and the school administrators, boosted the enrollment in vocational agriculture to 50 in September, 1964. By February, 1965, the enrollment had grown to 75. A second teacher has been employed for

the 1965-66 school year, since the enrollment in vocational agriculture will be 100 and that of a new occupational ornamental horticulture program at least 35. A special advisory committee has been formed to assist the teacher with the new program. All of this has happened within 18 months, and the future looks exceedingly bright.

● ● ● Participation in Conferences and Meetings

Members of the Bureau of Agricultural Education participated in meetings and conferences, including the American Vocational Association national convention, Minneapolis; the National Future Farmer convention, Kansas City, Missouri; the Pacific regional meeting of head state supervisors and teacher trainers of agricultural education, Hawaii; the California Agricultural Teachers' Association's annual conference, California State Polytechnic College, San Luis Obispo, which enrolled some 300 members and which was the largest number in the history of the event; the statewide conference on Vocational Education, Los Angeles; the annual California State Future Farmer Convention, San Luis Obispo, which attracted two delegates from each of the 225 FFA chapters; the annual Young Farmer-Young Homemaker convention, Riverside, which enrolled 225 official delegates and guests; and the National Vocational Agricultural Teachers Association, Minneapolis.

The Bureau was represented at and participated in several conferences at the National Center for Advanced Study for Agricultural Education, Ohio State University. In addition, Bureau staff members participated in a number of county-wide meetings concerned with expanding and improving vocational education and occupational opportunities.

An extensive "Careers" display was provided for the Future Farmers of America at the state convention held in San Luis Obispo.

• • • Cooperative Activities

Effective administration of agricultural education during the year involved cooperative relationships with other vocational education services, with other areas of education, and with various agencies and organizations. To a greater degree than ever, agricultural education is seeking improvements through use of resources offered by other branches of education and by agencies outside the field of education.

A close working relationship has developed between the California State Department of Education and the California State Department of Employment. Provisions of the Area Redevelopment Act, the Manpower Development Training Act, and the Vocational Education Act of 1963 have brought the resources of these two public agencies in close harmony. This combining of resources benefits every community in the state.

The cooperative working relationship that exists between the Bureau of Agricultural Education and the California State Polytechnic College is most valuable. Previous mention has been made of the use of consultants and the development of instructional materials by the staff of this college. In addition, the college assists the Bureau and teachers of agriculture in a variety of ways.

Typical of the cooperative activities of the Bureau during the year with other agencies, both within and outside the field of education, were the following:

- Cooperation with the California Growers' Farm Labor Committee, the State Department of Employment, and school districts in the instruction of farm foremen
- Close working relationships between the Bureau of Agricultural Education and the University of California, Davis. (The Bureau keeps in contact with the university in respect to teacher training and cooperates with it in conducting research and studies concerning agricultural education.)
- Assignment of staff members to work with the management of the Great Western Livestock Show, the Junior Grand National, and the California State Fair.
- Making available leaders in the Future Farmers of America for participation in the following meetings: Governor's Council on children and youth; the Young Peoples' Leadership Training Conference, sponsored by the California Farm Bureau; the Leadership Training Conference for 4-H club members, sponsored by the Agricultural Extension Service; state conferences of the California Farm Bureau and the California State Grange; meetings of the Council of California Growers; the state meeting of the Future Homemakers of America; and innumerable local service and farm group meetings
- Cooperation with representatives of four large banking chains in the annual home-supervised farming competition for more than 1,000 FFA members

- Cooperation with the Bureau of Audio-Visual Education and School Library Services, who were most helpful during the year in providing materials and equipment

- Cooperation of many associations, corporations, and other interested groups in providing scholarships, awards, and other incentives, both for agricultural students and agricultural teachers

- Conducting by the Agricultural Council of California of the "Co-Op Quiz" programs for some 4,000 vocational agricultural students. In this program the junior and senior vocational agriculture students are quizzed on their knowledge of farmer cooperatives. Schools and individuals compete for sectional, regional, and state awards and honors. These awards are presented at 30 award banquets held throughout the State. The Agricultural council budgets over $10,000 annually for this program.

- Conducting by Soil Conservation Districts of land-judging days for agricultural students. Typical of these activities was the program conducted in Merced. Fifty agriculture students from seven high schools in Merced and Mariposa counties gathered to view demonstrations and hear lectures on soil judging. The students competed in soil judging contests and were hosted at lunch by the Soil Conservation District.

- Cooperation of other bureaus of Vocational Education Section, State Department of Education, in an "across-the board" approach to the statewide and local problems of occupational education.

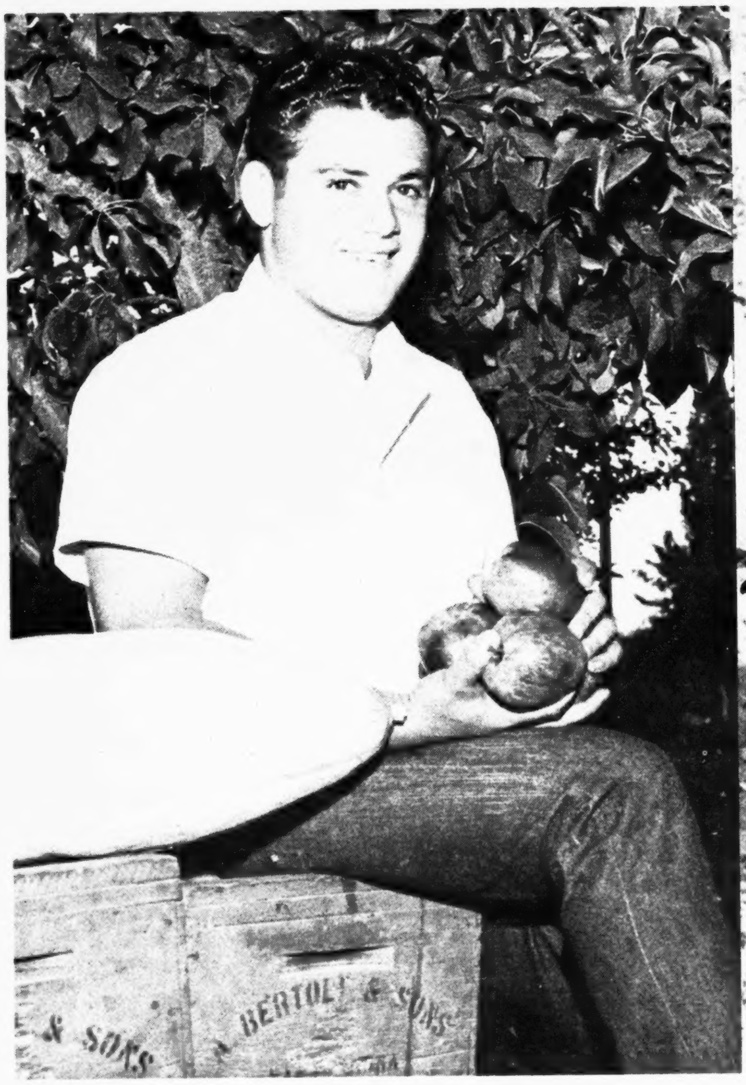
At Orange Coast College the coordinator of distributive education is the advisor for an "agri-business" project. Cooperation by the Bureau of Agricultural Education with the Bureau of Business Education involves determining the type of training needs in the area. This is done in part through visits by the advisor to agri-business employers.

A YEAR OF PROGRESS

The school year 1964-65 was a year of intense activity in California agricultural education. Enrollment gains in established programs were significant. During the year California became fully operative under provisions of the Vocational Education Act of 1963, and the Manpower Training program was refined, which enabled it to become an accepted part of the ongoing program of agricultural education.

• • • Instructional Programs and Related Activities

Enrollment in vocational agriculture reached a new high point in California during 1964-65. Impressive gains were made in programs under the Manpower Development and Training Act. Interest and enrollment in general agriculture continued to be high. New training programs were developed for adults, and other significant new programs were undertaken.



Supervised practice in production agriculture constitutes a major role in agriculture education.

Vocational students in agriculture observe cultural practices in the Coachella Valley.

Vocational Agriculture. Vocational agriculture programs are designed to provide a sufficient supply of trained workers to meet the demands for farm labor, for food and fiber processing, and for the myriad of occupations closely related to farming.

Enrollment in vocational agriculture reached the all-time high of 16,837 during 1964-65, an increase of 1,408 over that of the previous year. Three additional schools offered such programs during the year, bringing the total to 230.

General Agriculture. The introductory and orientation-centered agricultural education program in California showed a minor enrollment decline of 1,336 during 1964-65. Enrollment in 1,037 classes was 20,443. This decline can be explained partially by the fact that students who would normally have enrolled in general agriculture selected new vocational agriculture courses instead and also by the fact that expanded requirements for graduation leave students little opportunity to enroll in elective courses. This downward trend in general agriculture enrollment indicates that persistent effort is necessary to stimulate interest in introductory and orientation-centered agricultural programs.

• • • Training and Retraining Programs

There was significant expansion of agriculture training under provisions of the Manpower Development and Training Act. During the 1964-65 year, 1,410 trainees enrolled in 43 training programs, compared with 853 trainees in 20 programs during 1963-64. Training was provided for 11 occupations: farm mechanic, general farm hand, poultry farm hand, foreman, groundskeeper, groundskeeper-assistant gardener, groundsman-gardener, animal caretaker, nurseryman, tractor operator, and vine and tree pruner.

The placement rate for those completing training was about 65 percent. In addition, many individuals who terminated before completion of training did so to accept employment in the field for which training was provided.

• • • Adult Classes in Agriculture

The number of adult classes in agriculture and enrollment in these classes showed a significant gain during the year. During the 1964-65 year, 3,074 adults enrolled in 152 classes compared to 2,271 enrolled in 144 classes during 1963-64. This enrollment increase breaks a three-year downward trend and is most encouraging.

Agricultural power and machinery occupy the spotlight in modern agriculture. This spraying equipment was constructed by a vocational student and is used on his production project in the San Joaquin Valley.

VOCATIONAL EDUCATION ACT OF 1963

Increased financial assistance through provisions of the Vocational Education Act of 1963 resulted in the improvement and expansion of existing programs and the development of new programs in agricultural education. A total of 118 requests to improve, expand, or develop occupational training programs in agriculture were received from districts throughout the state. Of this number, 72 projects were funded, and occupational programs were developed for the following: agricultural technician, agricultural mechanics, agricultural welding, farm equipment operation, farm maintenance, forestry, floriculture, golf-course maintenance and management, groundsman-gardener, herdsman, harvest hand, livestock technician, livestock feeders, meat processing, nurseryman and nursery manager, ornamental horticulture, and park management. It is significant to note in reviewing these accomplishments that the major portion of them involves training programs for "off-farm" occupations.

THE PASSING OF THE BRACERO

December 31, 1964, is a significant date in the history of California agriculture and agricultural education. On this date the California farmer lost the easily accessible supply of Mexican braceros. The Mexican bracero for many years was a source of seasonal labor used in the production and harvesting of agricultural crops.

The curtailment of this supply of seasonal labor has forced within the agricultural industry widespread adjustments, many of which affect agricultural education. In many cases producers have converted to crops requiring little manual labor. Attempts to mechanize the production and harvesting of certain crops have accelerated at a rapid rate. The recruitment and training of a domestic labor force has been a "crash" program affecting agriculture and education.

Typical of the programs developed to provide an adequate agricultural labor supply is the program for training farm foremen. The University of California, in cooperation with the Bureau of Agricultural Education, the California Growers' Farm Labor Committee, and the Department of Employment, developed a program for training farm foremen to help fill the gap left by the bracero. Training programs developed in 24 local high schools had an enrollment of 410 individuals; it is estimated that this group will supervise the work of as many as 20,000 workers during the peak of the harvest season.

YOUTH ORGANIZATIONS

The program of the Future Farmers of America is recognized and well accepted as a most effective vehicle for training in responsibility, cooperation, community service, rural leadership, and other attributes of good citizenship. Membership in the FFA reached a new high during the year, when a total of 12,588 youths were enrolled in 230 chapters throughout the state. These Future Farmers were busy in varied activities including public speaking, parliamentary procedure, the exhibition of livestock at fairs, community service projects, project competition, and the like.

Emergency supplies were airlifted with the help of the Round Valley Future Farmers of America during the Mendocino County floods, Christmas, 1964.

Membership in the California Young Farmers Association during 1964-65 was 889 youths, who were enrolled in 30 high schools and junior colleges. Active in California and a few other states, the Young Farmers organization is designed to help young men who are getting started in agriculture. Its membership is used as a nucleus for adult education programs, and meetings are devoted to keeping the membership alert to new developments in agriculture. A new and promising development occurred during the year when several advisors to Young Farmers were released from their normal teaching assignments to devote full time to the leadership so important to this program.

Interest and enrollment in "Farmerette" groups continued to grow during the year. Fifteen of these groups, organized for girls studying vocational agriculture, have an estimated 250 members. The pressure is on, however, from these groups, their advisors, parents, and a number of school administrators to "open the door" to Farmerettes for full-fledged membership in the Future Farmers.

THE DEMAND FOR QUALIFIED TEACHERS

Agricultural education in California has for many years experienced a shortage of qualified teachers. During the 1964-65 school year, several high schools were forced to discontinue courses in agriculture because suitable teachers were unavailable. Other schools were unable to expand their programs because of this teacher shortage.

In an attempt to overcome this shortage of teachers, the Bureau of Agricultural Education, the teacher training institutions at California State Polytechnic College, and the University of California at Davis launched a vigorous recruitment program two years ago. This drive for teacher candidates paid rewarding dividends this year when 49 beginning teachers, one of the largest groups in history, were credentialed to teach vocational agriculture. Pre-enrollment indicates another bumper crop will qualify as teachers during 1965-66.

Significant changes are being made in teacher training programs for instruction in off-farm occupations. Stress is upon the following courses: agricultural business, farm machinery, farm management, floriculture, nursery management, and ornamental horticulture.

The Bureau and the teacher training institutions were active during the year providing opportunities for experienced teachers to keep up-to-date and to develop new skills required for the expanded emphasis on off-farm occupations. Typical of the means employed to keep teachers up-to-date are consultant services to high schools and junior colleges, provided by an ornamental horticulture specialist from Cal Poly; the skills week program; the annual Teachers' Conference; regional and sectional meetings conducted by regional supervisors; the Biggs workshop; and the Humboldt State College forestry school.

RESEARCH AND STUDY

The Bureau both encouraged and participated in research studies that were conducted to secure information needed in the agricultural education program and to determine ways in which the program could be made increasingly effective.

• • • Agricultural Technicians

A research study of agricultural technicians was made by Bruce F. Jensen, Director of Agriculture at the College of the Sequoias in Visalia. This study, partially funded from National Defense Education Act funds, was concerned with determining the character of the work force, the turn-over or openings annually, job qualifications, and a study of the training programs needed to prepare students for occupations in agricultural business, governmental agencies, and farms of the College of the Sequoias service area.

The study identified individuals serving in technician level occupations, determined the future need for these individuals, and resulted in curriculum changes to prepare agricultural technicians more adequately.

The recommendations of the study established that a definite need exists for agriculturally trained people in the area; established that basic courses should supplement specialized training; and established that the wide variety of employment opportunities is best served by general course patterns, with specialization offered through electives. Employers placed great emphasis on the need for employees to be able to communicate; to have a good knowledge of English and mathematics; and to develop the ability to accept supervision and perform supervisory tasks. The study also suggested that employers in the area needed to be made more aware of the agriculture department of the junior college as a good source of trained people.

• • • Conservation Project

Modesto Junior College, with financial assistance from the Vocational Education Act of 1963, conducted a study titled "A Research Project to Determine the Need for Education in Conservation and to Develop a Curriculum as Need Indicates." The primary objective of this study was to determine answers to the following questions:

- Does a core of instructional material common to these areas exist?
- What is the extent of present facilities and needs in conservation?
- What are the needs in both the private and public sectors of the economy as to employment and opportunities in conservation?
- What level and kind of training are required to prepare for such employment?
- What is the possibility of technician level training in the general area of conservation or within special areas in this field?

Preliminary reports of the study indicated that:

- A need exists at the technical level for individuals trained in forestry and rural recreation.
- A core of instructional material can be utilized for a number of training programs in conservation.
- Specialized courses need to be added to the junior college curriculum in forestry, rural recreation, and wildlife management.

• • • Farm Foremen

James W. Becket of the Agricultural Education Department at the University of California at Davis conducted a pilot study in connection with the farm foreman training program of May, 1965, on the backgrounds, work histories, attitudes toward work, values, and motivation of the domestic farm laborer. Eighty-two farm laborers were interviewed. This was a 20-percent sample of the domestic stoop labor force of one organization. The success of the pilot project led to plans for conducting a study on a larger scale. The following benefits are expected to accrue:

- More factual evidence would be obtained concerning the type of person the farm foreman works with.
- Actual experiences could be cited to support the contention of a need for some changes in labor management.
- Previously held opinions and beliefs about the content of the farm foreman course would be confirmed, altered, or supplemented on the basis of a larger study.

In addition to these benefits, the pilot program pointed out that several areas related to the effective utilization of manpower in agriculture need further study. Some of these are the social, recreational, intellectual, and educational needs of such workers.

• • • Ornamental Horticulture

During the year the agricultural staff at Hartnell Junior College in Salinas conducted a study, with financial assistance from The National Defense Education Act, to identify agricultural technicians in the field of ornamental horticulture; to determine the need for these individuals; to determine the training required; and to make necessary curriculum changes.

Funds available from P.L. 88-210 made possible the purchase of equipment for ornamental horticulture.

• • • Junior Colleges

Ralph M. Vorhies, Crops Department, California State Polytechnic College, San Luis Obispo, conducted a study of the status of agricultural education for nontransfer students in California junior colleges. This study led to the following conclusions:

- Agricultural education for transfer students in California junior colleges has been quite successful for students going on to four-year colleges, but in general the nontransfer students have been neglected.
- Courses in technical agriculture have been of value to former nontransfer students and were recognized as valuable by students and employers alike.
- The placement and follow-up of nontransfer students in agriculture has been given minimal attention.

- A need also exists for some curricular changes to better equip these students for agricultural jobs in which their rural background and training would be fully utilized.

- Agricultural technician training programs similar to those recently started at Modesto Junior College and Mount San Antonio College have been valuable. They are based on local agricultural needs of the community, which they are successfully meeting. These programs also fulfill important needs for junior college agriculture students who are not planning to transfer to a four-year college.

PILOT AND EXPERIMENTAL PROGRAMS

Several pilot and experimental programs were sponsored by the Bureau of Agricultural Education.

• • • Training for the Mentally Retarded

The office of the Santa Cruz County Superintendent of Schools conducted a pilot program to determine whether an agricultural community can serve as a source of supervised employment for severely mentally-retarded youth. The pilot group consisted of eight boys whose IQs ranged from 30 to 55 and whose ages ranged from 16 to 21.

Certain of the findings and conclusions of this pilot program follow:

- Mentally retarded youth apparently work better under close supervision.

- The members of the group evidenced considerable potential for learning. Power tools operated independently by the boys included a roto-tiller, power lawn mower, power drill with sander attachment, and a power saber saw.

- The pilot group produced fine wood projects, showing promise in working with hand tools.

- Two members of the group are presently caring for livestock projects independently. One boy, who is a cerebral palsy victim, rides his bike over four miles daily to feed and care for his sheep.

- One boy is presently working part-time on a truck crop farm earning $1.25 per hour harvesting and loading vegetables.

Next year, horticulture training will be stressed in the program for the mentally retarded. Because of the increasing value of the nursery industry in the Santa Cruz area and the nature of the work, a considerable number of opportunities exist for employment in this phase of agriculture.

• • • Farm Machinery Training

The Colusa High School in northern California developed a new program to train terminal agriculture students in the operation, care, and repair of farm machinery. This program, which enrolls a high number of potential drop outs, has been enthusiastically accepted by the students, and there is presently a waiting list to get in. The program, which offers a wide variety of farm experiences, is designed to provide occupational training for students who are below average in ability. Seven out of ten enrolled in the first class obtained summer farm jobs.

• • • Ornamental Horticulture

Courses in Ornamental Horticulture are not new to California high schools. However, during the year a large number of school districts offered, for the first time, groundsman-gardener courses. These courses, which are occupational in nature, usually require two years to complete. They are designed to provide the necessary skills for lower-ability students to acquire entry level jobs in the field of ornamental horticulture. Job placement of students who have completed the courses has been excellent.

JOB PLACEMENT AND FOLLOWUP

One of the most neglected phases of the agricultural education program is the follow-up study of graduates' success. While sketchy information is available to indicate that graduates of the program have a high degree of success in securing employment in agriculture and of doing the required work, more detailed information and depth studies are needed to evaluate the program properly. Significant steps taken in California during the past year to improve this situation follow:

- The funds made available to California under the Vocational Education Act were allocated to school districts on the basis of project application requests received from the districts. Provisions for job placement and follow-up records of graduates of on-going programs were considered to be essential phases of projects approved. The districts for whom projects were approved and to whom financial assistance was granted were requested to submit follow-up records of the students who participated in the projects before reimbursement claims would be approved.

ADJUSTMENT TO CHANGE

Change and adjustment are the most common words in the vocabulary of the California farmer. Changes in agriculture, the most basic phase of the California economy, have resulted in adjustments in agricultural education in the state. Among these adjustments the following may be noted:

- New training programs have been developed to assist in providing an adequate agricultural work force during the transition from braceros to domestic farm labor.

- Curriculum changes have been made in the traditional vocational agriculture program to meet the expanding demands of the off-farm agricultural occupations.

- New programs have been developed to provide for students the instruction and training they need to meet the job requirements that are developing as a result of the mechanization of farming and other agricultural activities.

- Technical training has been included in the junior college curriculums because of the training and retraining required to meet the needs created by mechanization of agriculture.

- MDTA programs, altogether 43, were conducted for 1410 unemployed and underemployed persons to further their transfer from relief rolls to payrolls.

- More emphasis was given work experience programs in occupations closely related to farming. One of the major changes in the supervised farming programs was made possible in vocational agriculture by revision of the Smith-Hughes Act.

- New occupational training programs have been introduced in all areas of the state and financed in part with funds provided by the Vocational Education Act of 1963.

PROGRAM INTERPRETATION AND PROMOTION

Program interpretation and promotion are becoming progressively difficult for the Bureau of Agricultural Education. Migration of farm population to the city; rising costs of production combined with lowering prices of farm products; mounting surpluses; farm support programs; and reductions in the farm labor force have all played some part in creating this difficulty. The factors to be corrected include the following:

- Insufficient attention has been given to opportunities in the field of agriculture.

- The "new agriculture" has not taken on the luster of a "glamor career."

- Wages, while improving, are generally not competitive with those paid in other occupations.

Agriculture is a big job that offers a bright future. Boys and girls, parents, teachers, advisors, school administrators, counselors, and the general public need to be made aware of the size of the job and the future it offers. Agricultural educators must make every effort to help them to develop this awareness. They can secure much help in this work by encouraging the schools in which vocational agriculture programs are being offered to keep the local press, the radio, and television stations informed regarding program achievements. These educators should encourage them to broadcast the information statewide. The California Future Farmer magazine, published by the Future Farmers of America (FFA), was a major power in the creation of a favorable attitude toward agricultural education. This magazine, which has been published for 34 years, is distributed to each of the 12,600 FFA members and to about 1,500 adults, including national and state legislators, county superintendents of schools, managers of fairs, and many others identified with education, agriculture, and public affairs.

A major responsibility of the Bureau of Agricultural Education is the promotion of agricultural education. Members of the staff help to meet this responsibility by writing newspaper articles, appearing on radio and TV programs, contacting school administrators, working closely with agricultural leaders, and making presentations to public and civic organizations.

Future Farmers of America, by the very nature of the organization's program, has a sense of excellent public relations. The FFA member, with his neat, attractive uniform, his excellent conduct, his concern for community welfare, and the enthusiasm with which he carries out his program of activities, reflects favorably upon the organization. In the rural areas of the state the FFA is commonly the most active organization in the schools; and as a result of its outstanding leadership program, members of this organization usually hold a major portion of the key student leadership positions in the school.

The Bureau has set as one of its objectives for the coming school year the promotion of agricultural education by the following means:

- Providing assistance to school districts in the development of new occupational programs under provisions of the Vocational Education Act
- Continuing to assume responsibility for providing instruction under the Manpower Development and Training Act
- Continuing to promote programs under the National Defense Education Act
- Devoting more time to helping junior colleges strengthen and expand their vocational programs.
- Intensifying efforts to improve the image of agriculture by making the general public aware of opportunities in agriculture
- Continuing to develop new occupational programs for off-farm occupations

LEADERSHIP

Providing effective leadership in agricultural education for the most populous state in the nation has placed unusual strains and stresses on the Bureau of Agricultural Education. Fulfilling the requests of school districts for assistance in developing new programs under provisions of the new federal acts and, at the same time, servicing the needs of the on-going program of agricultural education have taxed the resources of the Bureau. And it must be noted that the demand is getting greater because of the revolutionary changes occurring in California agriculture. The trend is toward greater specialization, more mechanization, larger production units, greater financial investment, and the expansion of scientific techniques--all of which require agriculturists to possess skills never before required for the production of food and fiber.

In addition to the traditional on-going leadership activities of the Bureau of Agricultural Education, the following items are "ear-marked" for special attention during the coming year:

- Assist in developing a new State Plan for Vocational Education, which retains the desirable features of agricultural education.
- Identify and recommend qualifications, in addition to credential requirements, for teachers of reimbursed classes in agriculture.
- Assist with the development of a new departmental organizational structure which will insure the orderly transfer and continuance of the desirable functions of the present Bureau of Agricultural Education.
- Identify and evaluate the present functions of the Bureau staff, including those relating to Future Farmers, Young Farmers, and the California Agricultural Teachers' Association.
- Continue to seek advice and assistance from other individuals and agencies interested in agricultural education.
- Assist teachers of agriculture to develop outstanding programs of agricultural education.
- Continue with increased zeal to recruit teachers for agricultural education.

FACILITIES FOR AGRICULTURAL EDUCATION

California is noted for providing excellent facilities for education. And although the "population explosion" has forced upon the state a problem that has severely taxed its resources, this reputation has been retained.

With few exceptions, the vocational agriculture programs in California are adequately served in terms of buildings, rooms, and instructional equipment. A number of new buildings for agriculture were constructed during the year; several others have been planned. Many school districts have made and are planning additions to their present facilities. Several junior colleges received financial assistance from Vocational Education Act funds to construct agricultural facilities during the year.

Providing adequate facilities for the development of ornamental horticultural programs received major attention during the year. A large number of greenhouses, lathhouses, headhouses, and propagation plots were developed;

however, this is still one of the areas in the program for which facility needs continue to be great. Suitable school farm laboratories for the increasing number of nonfarm boys enrolling in vocational agriculture are also needed.

The mechanization of agriculture requires the schools to provide the specialized training required to operate the equipment, and for specialized training they must have several of the types of equipment available for instructional use. The schools, therefore, face the problems involved in training and housing the required equipment.

The emphasis being placed on off-farm occupations also places demands on the schools to supply the instructional equipment used in these occupations.

RESEARCH NEEDED

Recognizing the need for research to provide the answers to a multitude of questions facing agricultural education, the Bureau devoted a staff meeting to identifying needed research. As a result of this meeting, the following areas were singled out for study:

- Definition of effective instructional programs for young farmers and adults
- Vocational guidance and follow-up of agricultural students in terms of placement
- Value of school farm laboratories
- Identifying agricultural workers--determining which agricultural jobs need agricultural background and training and what experiences and training are needed for related occupations
- How to counsel ineffective teachers
- Work experience
- Curriculum for low-ability students
- The place and training requirements of the agricultural technician

VOCATIONAL EDUCATION ACT OF 1963

The Vocational Education Act of 1963, which is certainly the most important piece of legislation affecting vocational education since the Smith-Hughes Act, has had a stimulating impact on agricultural education in California. Implications of the act were felt by every school and community in the state. While not every district in California received financial assistance through this act, vocational education profited in all districts from the renewed interest and support resulting from the attention focused upon it by this act.

MANPOWER DEVELOPMENT AND TRAINING ACT

The Manpower Development and Training Act made possible the development of programs that were designed to solve the problems involved in reducing unemployment.

SMITH-HUGHES ACT

The Smith-Hughes Act, while overshadowed by the massive new federal assistance programs, remains as important to vocational agriculture today as it was in 1917. This basic "badge of belonging" act is responsible for the ongoing program of vocational agriculture which, in California, is still the backbone of agricultural education programs. Great care must be utilized to safeguard the provisions of this act.

PLANS FOR THE FUTURE

Plans for the future were formulated with an awareness of the magnitude of the task ahead for agricultural education, a realization of the changes taking place in agriculture, and an appreciation of the opportunities and challenges created by these changes.

Plans for the coming year are designed to make full use of the opportunities that exist in the provisions of the Vocational Education Act of 1963 for research and the development of new programs. Proper attention is given to new programs for the "off-farm" occupations. The strength and effectiveness of vocational agriculture will be determined by the quality of the programs now operating in the high schools and junior colleges of the state. These on-going programs require Bureau attention, particularly the following regular administrative and supervisory functions:

- Review and recommend for reimbursement applications for classes in vocational agriculture which meet requirements established in the State Plan for Vocational Education
- Supervise the agricultural education programs in operation in the public schools of the state
- Promote and supervise courses in agriculture for young and adult farmers
- Assist in the placement of agricultural teachers
- Conduct and promote research on current problems in the field of agricultural education
- Assist teachers to maintain and improve supervised practice programs for agricultural students
- Advise the California Agricultural Teachers' Association

- Advise the Future Farmers of America and the California Young Farmers

- Work with all appropriate agencies for the betterment of agricultural education

- Keep the general public and all school officials informed of the problems, work, and accomplishments in the field of agricultural education

- Give teacher recruitment special attention. Traditionally, recruitment has centered on high school seniors and incoming college students. Efforts are now being directed to individuals out of college and in some phase of the agricultural industry. This new direction is producing more new teachers and promises to be a desirable method of getting occupationally experienced teachers.

While the 1964-65 school year will go down as one of the most active in the history of agricultural education, all indications are that it will also be known as one that marked the starting of intensified activity in the field of agricultural education. For, regardless of how much was accomplished during the year, much was started but left undone, and much that needed to be done was not even touched. Unemployment continues at an exceedingly high rate. Employment is becoming increasingly dependent upon special and highly developed skills; retraining programs for persons displaced by automation are in increasingly great demand; and there is a constant challenge to create jobs needed to meet the demands created by the population explosion.

The agriculture education program offered by California schools is designed to be of great assistance in meeting and solving many of the problems that are paramount in the minds of most citizens. And every effort is being made to expand and strengthen the program as necessary to make its contribution increasingly greater and more valuable.

During the next ten years, hundreds of career opportunities in fields related to farming will be opened through agricultural education programs, but they will not be adequate in number to provide work for more than a small percent of the state's population. However, the work will be vital to the well-being of California.

BUSINESS EDUCATION

RULON C.
VAN WAGENEN
STATE SUPERVISOR

CHANGE AND ITS IMPACT

Since the scope of business education is as great as that of business, and since business is constantly expanding and business procedures are in a constant state of flux, it is impossible to present a picture of business education today that will be true and current tomorrow. Change is characteristic of business education, especially in California where business is expanding and diversifying, and new business procedures are being introduced at rapidly accelerating rates. To keep pace, California business education is constantly being extended in scope, which requires new instructional programs, updated methods and materials, and modification of existing programs.

The impact of change upon the California business education program has been intensified by the Vocational Education Act of 1963. The change has made necessary the determination of new definitions of both the general and the vocational values of business education; the development of some new phases of the business education program and the modification of practically all existing phases; and the extensive improvement of the business teacher education program. In taking these steps, the California business education program has been geared to meet the existing needs of business for well-trained employees in the distributive and office occupations. The program has also been geared to meet needs that may arise in the near future. Thus, business education offers all residents of California who are interested in pursuing careers in business the advantage of a business education program that will equip them for employment and success in their chosen fields.

OBJECTIVES, TERMINOLOGY, AND LAWS

To understand what is happening in California business education, one must know the goals of such education, the meanings of basic business education terms, and the laws which relate business education in California to the national scene. It is also important to be informed regarding the state's growing business work force and the role of this force in the vigorous business economy of California and of the nation.

• • • Objectives of Business Education

Business education is an integral phase of the educational program offered by California public schools and as such contributes toward the attainment of the objectives set for the program. The objectives for this program are designed to give the direction required to meet the responsibilities outlined in the following statement by the Joint Interim Committee on Education of the California Legislature.

> The public school system has a responsibility both to the individual and to society. The public school system should provide the opportunity for every individual to become educated to the maximum of his ability. Human liberty is best guaranteed through representative government and democratic processes. Only an enlightened people can wisely exercise liberty and pursue happiness.

The Policies Commission for Business and Economic Education has in reality stated that business education has the following objectives:

1. To provide opportunity for all persons to acquire the knowledge they need to understand our economic system sufficiently well to conduct their personal business and the nonvocational skills they need for personal use in conducting their own business affairs or for other personal reasons

2. To provide opportunity for all who wish to pursue careers in business to acquire the knowledge and vocational skills they need to secure their first jobs and to advance in their chosen fields

• • • Terminology of Business Education

Many of the terms of business education are familiar to everyone. "Business education" as used in this report refers to all occupational training programs in California that are designed to prepare persons for employment in business offices, and in the distribution, marketing, or service occupations. "Office education," one phase of business education, is used to identify programs that provide opportunities for students to acquire the knowledge and skills required to perform the "facilitating functions" of the various types of business organizations. "Distributive education" is a term less well known than "business education." Essentially, "distributive education" is that phase of business education that is designed to prepare individuals to enter the retail, wholesale, and service trades known as the distributive occupations and to provide for those employed in such occupations the instruction they need for advancement.

The office education programs offered by California schools are designed to help the student become knowledgeable regarding office procedures and to become proficient in doing the work required.

• • • Federal Laws and Business Education

Responsibility for improving instruction in business education and certain of the responsibilities for direct supervision of the following federally aided programs rest with the State Department of Education:

- The George-Barden Act of 1946 appropriates funds for the further development of distributive education. In 1964-65 federal, state, and local expenditures in California under this act were over $1 million.
- The George-Barden Act, Title III, provides money for the training of highly skilled technicians. In 1965 the Bureau supervised an expenditure of over $400,000 provided by this Act for the establishment and operation of business data processing programs that were designed to meet the demand for technicians in this field. This expenditure was more than matched by the school districts in which the programs were established.
- The Manpower Development and Training Act of 1962 (MDTA) sets up a nationwide federal program to provide vocational and on-the-job training (OJT) for unemployed and underemployed persons to acquire the skills needed in today's labor market. Training under this act is designed to equip workers with new skills, to upgrade their present skills, and to meet the job needs of workers who are temporarily displaced by automation, technological change, geographic relocation of industry, and other causes. More than one-half of all the projects conducted in California under the Manpower Development and Training Act are training workers for the business occupations. In 1964-65 expenditures in California for these programs exceeded $3 million.

- The Vocational Education Act of 1963 extends vocational education so that persons of all ages in all communities will have ready access to vocational training that is of high quality and that is designed to meet their needs, interests, and abilities. Of $106,650,000 appropriated last year by Congress to assist the states, a total of $7,651,248 was allocated to California, and from this appropriation a total of $3,060,499 was devoted to business education. The act gives a new dimension to vocational business education; for the first time, federal funds are available for the further development of education programs for the office occupations. This is vital for California, since business education accounts for about 40 percent of the state's vocational education projects; of these business education projects, 90 percent are in the business office field, and 10 percent are in the distributive field.

CALIFORNIA'S BUSINESS WORK FORCE

Business workers form the largest occupational group in the nation's work force, also the largest in California's work force. In July, 1964, more than 10 million persons were employed in clerical and kindred occupations in the United States; in California, in excess of one million. More than 15 percent of all employed Americans are engaged in office occupations; about 34 percent of the employed women are office workers. More than two million Californians are also employed in another branch of business--the distributive occupations. This group represents almost one-third of the state's total work force.

Although few phases of the state's economy are without workers who perform a business function, the proportion of the total group employed that has business functions differs from one phase of the economy to another. In some industries, as high as 98 percent of the workers have business functions; in government, 20 to 30 percent. In March, 1965, the California State Department of Employment reported 6,640,000 employed workers of an available labor force of 7,112,000. Virtually half the employed were performing business functions.

In California, business occupations are not only the most numerous, they are also among the occupations that are expanding most rapidly. The productive capacity of the nation has been greatly increased by the use of automation. True, automation has decreased the number of workers required to maintain production, but of greater importance is the fact that automation has intensified the need for an ever increasing number of workers to market the products. Business occupations, particularly those in the field of marketing, hold great promise for expanding employment in the years ahead.

PROBLEMS FACED BY BUSINESS

The American business system is faced with serious problems in the home market, and also in the world market. Competition is keen and unrelenting. Automation and technological change are exerting great influence in reshaping the business system. To maintain the high wages necessary to provide for an increasingly high standard of living, business must constantly strive for greater efficiency. In this endeavor, business must have employees who are well trained and constantly improving their skills through participation in well-planned instructional programs. And business must mechanize some of its routine operations, even though some workers will be displaced. This displacement, however, will be only temporary, provided appropriate and adequate business education programs are available to give those displaced the training they need for other work. To help train the vast army of business workers required to support our free enterprise system--in the number and with the competency required--is a major responsibility of public education.

RESPONSIBILITY AND ACTION

The State Department of Education has a statewide responsibility for providing the guidance and services required to maintain in the public schools an instructional program of business education that is geared to meet the needs for well-trained workers, needs that are constantly arising in the field of business. The Department meets this responsibility through services rendered by the Bureau of Business Education,which operates in the Vocational Education Section. The ways in which the Bureau meets these responsibilities are described in the following sections.

• • • VEA Conference

As in all fields of vocational education in California, there was a great need for further information on conducting programs under the Vocational Education Act of 1963. In response to this need, the Bureau brought together in Long Beach for two days over 300 school administrators, teachers, and business department heads to discuss implementation of the act. Methods of conducting business education programs, as well as ideas regarding the functions of the programs, were exchanged, and participants were informed regarding the changing needs of our business labor force, new developments in business education, curriculum building, and methods of evaluating instructional programs.

• • • Contractual Agreements

Teacher education courses in distributive education were offered by the University of California at Berkeley and the California State College at Long Beach during the 1964 summer sessions under contractual agreements with the Bureau. These courses were (1) Introduction to Distributive Education; (2) Methods of Instruction in Distributive Education; and (3) Curriculum Development in Distributive Education. The courses offered by the University of California had an enrollment of 26; those offered by the State College, an enrollment of 16.

• • • Teacher Education Materials

The teacher education materials prepared by the Bureau during the year included manuals for office procedures and business data processing and a guide to development of MDTA business educations projects, and in addition to these, the Bureau has prepared and made available for use in the business education program 14 publications including Merchandising Management, Our System of Distribution, and Developing Business Education Programs in Classes for Adults.

Significantly, over a period of years the majority of the publications prepared by the Bureau have dealt with distributive education. This has been due to the availability of federal funds under the George-Barden Act. However, with funds provided by the Vocational Education Act of 1963, the number of publications developed in office education will increase during the next year.

• • • Standard Entry Job Requirements

One of the problems facing business education in California is to determine and help to establish standard requirements for entry jobs in business. At present there is no uniformity in the requirements. The required rate of speed in typewriting ranges from 40 to 60 words per minute, and in shorthand from 80 to 120 words per minute. Job specifications are not uniform; some state only brief generalities; others are very specific regarding the knowledge and skills required. And there is great variation in the content and standards of the tests employed by the federal, state, and local government agencies to select personnel for entry jobs.

Supervised practice in writing shorthand from machine dictation provides students opportunity to acquire the efficiency required for employment.

As a first step toward solving the problem of standardization, the Bureau conducted a study of all business projects operating under the Vocational Education Act. This study is the source of most of the VEA business statistics that have been used in descriptive and statistical reports for the past year. At the same time, the Bureau made a synthesis of some job classifications for entry jobs for high school students and organized and conducted three conferences to study the office job requirements for entry positions.

• • • MDTA Regional Conferences

In two regional conferences conducted by the Bureau--one in Los Angeles, the other in San Francisco--over 250 school administrators, supervisors, and teachers studied the operation of business education programs under the Manpower Development and Training Act and discussed the instructional and counseling problems encountered in conducting the programs. Representatives of the California State Department of Employment also participated in the conferences.

Section meetings were devoted to (1) a study of testing procedures used in the selection of employees; (2) a discussion of counseling procedures used in various business education programs offered under MDTA; and (3) a study of trainees' problems, career objectives, and attitudes toward the programs.

Many employers attended the section meetings and outlined the testing procedures used by their respective firms in selecting employees. Several trainees also attended the section meetings and made themselves available for answering questions posed by the participants.

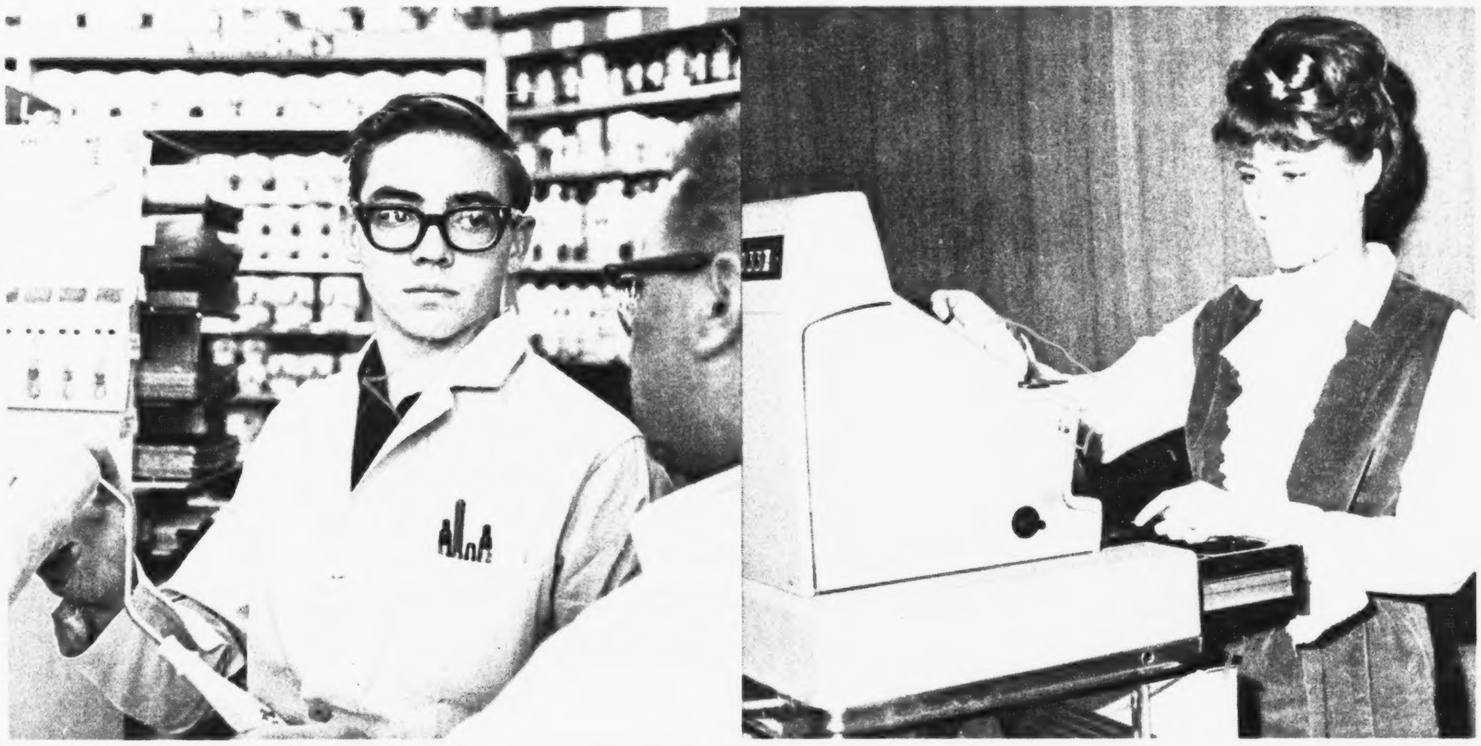
• • • Workshop for Distributive Education

The workshop conducted by the Bureau in San Francisco was devoted to the curriculum for distributive education programs offered by high schools, junior colleges, and adult schools or in classes for adults. The 45 participants in this workshop were selected by the Bureau from personnel engaged in the distributive education program offered by California schools.

In one phase of the workshop, the group studied the basic principles of curriculum development for distributive education and ways of solving the problems involved in developing curriculum by levels of instruction. In another phase, the group was divided, and each subgroup evaluated the content of certain courses and suggested revisions.

Of the major achievements of the workshop, two merited special consideration: (1) including a course of study in merchandising management in the business education program for junior colleges; and (2) making available for high schools a new approach to curriculum building based on job analyses for entry jobs in distributive occupations.

Several units of instruction in distributive education were revised on the basis of the results secured in analyzing entry job requirements in the distributive occupations.



The distributive education programs offered by California schools provide opportunity for students to have the on-the-job training and experience they need to secure employment.

• • • Conferences to Establish Sound Employer-School Relationships

About 100 representatives of federal, state, and local governmental agencies, representatives of private business, and a research analyst of the California State Department of Employment responded to invitations to attend the conferences at Los Angeles, San Francisco, or Sacramento. The participants in each of the conferences discussed present and future opportunities for high school students in office occupations and reviewed the entry requirements for office jobs for high school students. They were impressed with the idea of developing standards that could be used as guides in preparing students for entry jobs by the high schools and junior colleges in California. By developing clear delineation of the duties required of the general office clerk, clerk-typist, and stenographer, the groups hoped to motivate young people to meet special employment standards as well as to master basic education as a requirement for successful employment in government, business, and industry. And in making these decisions, the participants were constantly reminding themselves of the fact that there is a wide range of individual abilities.

Recommendations. The following recommendations for improving the preparation of graduates for entry office jobs were developed at the conferences:

- A review course should be given in the senior year of high school to provide opportunity for students to be at their top level of preparation for employment at the time they graduate and begin seeking employment.

- More training should be given in grooming and job interview techniques.
- Students should be made aware that what is expected in school is also expected on the job. Many students are surprised to hear that employers expect attendance and punctuality and to learn of minimum employment requirements. They need to be convinced that teacher standards coincide with employers' requirements.
- Business educators should share reports and publications with other educators and bring the needs of business to the attention of the English, mathematics, and counseling departments to a greater degree than in the past.
- Selected teams of teachers should work with the Bureau of Business Education and with office employees to develop realistic programs. The Bureau should arrange for teams to observe and interview office workers on the job, to take orientation training courses, and to take employment tests.
- Employers should accept certificates of completion for some job-oriented course sequences. For example, some government agencies will accept school certificates for skills in shorthand and typing. Schools should work with business and industry to utilize these skill certificates and, in addition, should motivate employers to call on the schools for attendance records and test results on standard tests given by the counseling staffs. Since similar tests are given by counselors, the time and expense of testing by business could be reduced.

The conference recommendations were accompanied by the suggestion that workshops be conducted for each of the following purposes:

- To develop combination job-training sequences for home economics, industrial, and agriculture education teachers, and teachers from other departments of the school
- To acquaint representatives of government, business, and industry with business education programs
- To develop resource materials for business education with the help of the following groups of people: principals, counselors, elementary and junior high school teachers, mathematics and English teachers, high school counselors and administrators, office workers, office supervisors, training directors, members of professional organizations in all areas of education, and representatives of business and industry

Implementation of Recommendations. The Bureau is now organizing project teams to develop curriculum in conformity with the recommendations of the conferences and to conduct workshops with school districts to provide help in making the best introduction and use of new teaching materials. To help employers to continue their interest in improving business education programs, the Bureau will form a state advisory committee and assist in the development of curriculum materials. The committee will include business teachers, teachers of basic subjects such as English and mathematics, school counselors, and school administrators.

• • • Cooperative Activities

Activities of the Bureau during the past year included conducting projects in cooperation with the California State Department of Employment, the Bureau of Homemaking Education, the Sacramento Unified School District, the Bureau of Agricultural Education, and several of the junior colleges with agri-business programs.

Peralta Survey. The Peralta Small Business Survey was one of two projects that were sponsored by the Bureau of Business Education and the California State Department of Employment to determine the needs of the owners, managers, and employees of small businesses, especially those of businesses operated by members of minority groups. This survey, financed with Manpower Development and Training Act funds, was conducted by the business education staff of the Peralta Junior College District, Alameda County, in cooperation with the Bureau and Department of Employment. The survey was made of small businesses operated in the area served by the junior college district. Both the community and business organizations in the area assisted in making the survey successful. The other project sponsored by the two government agencies was conducted in the area served by the San Diego Junior College District.

The Bureau of Business Education has copies of the report of the Peralta Survey, which may be secured upon request. Some of the highlights of the report follow in brief form. These, along with all the findings of the survey, merit special attention by all agencies and individuals who have responsibility for the development and operation of business education programs that are designed to meet existing needs, especially if the needs of small businesses are to be met.

- There are 4,800,000 business firms in the United States. Of this total, more than 93 percent, or nearly 4,500,000, employ fewer than 20 persons. Surely it is not an exaggeration to state that small business is the backbone of the American economy.

- Almost 20 percent of small businesses discontinue operation within a year. A study by the Department of Commerce indicates that over two-thirds of the firms operating today will not be in business under the same management by 1969.

- Some of these discontinuances are a result of natural causes such as health or changes in family situation, but many are the result of business failure. A continuing study by Dun & Bradstreet, Inc., reveals that over 91 percent of all business failures are due to lack of business knowledge and experience and to management incompetence. If lack of business knowledge and management incompetence are the key problems facing small businessmen, then training courses for small business owner-managers and their employees would seem to be an obvious solution.

- The personality factor of independence can be a liability as well as an asset to a small businessman. The pride of owning a business, of being one's own boss, represents a strong driving force. The small businessman is usually independent and ambitious, and he has great confidence in his abilities. A certain amount of tough-mindedness, or stubbornness, is evident among those persons who have chosen to operate their own firms. Frequently, their independence makes them reject outside help. Many small businessmen are skeptical of academic knowledge or training. Often they are unwilling to accept advice and counsel from educators despite the fact that large firms actively seek assistance from educational institutions.

- Obtaining competent employees is the small businessman's most frequent problem. Surprisingly little effort is devoted to recruiting and training the typical small business employee. Many managers complain that their employees lack industriousness, dependability, loyalty, and willingness to accept responsibility; yet, they offered little evidence of planning selection procedures to ensure getting employees with these characteristics. Nor did the survey find many instances of effective employee training. Often, small business employees have little idea of their responsibilities and duties.

  It is not unusual for owner-managers to hire poorly qualified employees at low wages with the idea of keeping expenses low. Even more common is the small businessmen's fear that their highly competent employees are potential competitors. Some managers will attempt to limit the training and income of their employees while at the same time demanding unequivocal loyalty. This policy is obviously contrary to good personnel management, and it severely limits employee efficiency. In contrast, it was found that some owners seek to create a community of interest by offering their employees a stake in the business either through profit-sharing plans or partial ownership. Usually, this leads to highly motivated employees who continually seek to expand and improve business operations.

- Minority businessmen face special problems. The problems of each minority group are, to some extent, unique. For example, in California many Mexican-American businessmen and their employees are handicapped by their inability to speak English. Whatever their special problems, all minority businessmen share enough common problems to permit some generalizations.

  A "ghetto psychology" exists among some minority businessmen. For many reasons they feel it is easier and safer to remain within certain racial and economic confines. In the ghetto they do not have to compete against Caucasian-operated businesses; in addition, ghetto business offers an opportunity for intraracial exploitation.

Those minority businessmen who rely on racial loyalty to retain their customers while failing to compete on the basis of prices, quality, and service are facing a dwindling market. As economic and social barriers continue to crumble, minority shoppers are flocking to those firms which offer a wide selection of quality products at competitive prices. Moreover, an increasing number of large Caucasian owned and operated firms are actively seeking minority business.

- A modestly conceived and implemented training program for owner-managers and their employees will not result in sudden prosperity and expansion for small business. In order to boost small business productivity and expand employment opportunities, an ambitious program with broad community support is required. The efforts of business, community, and government organizations must be coordinated and directed at assisting small business. An effective program would combine the resources of the Small Business Administration, local chambers of commerce, business and service organizations, city and state governments, local financial institutions, and minority organizations. The program should be coordinated with antipoverty efforts and supported by local educational institutions. Therefore, the Peralta Survey makes the following recommendations:

A series of neighborhood workshops be organized for the purpose of developing effective training procedures.

A business counseling service be offered in conjunction with the workshops. Several specialists in small business operations would be available to help individual businessmen with their special problems and to suggest additional sources of assistance.

Special training courses be established to assist minority small businessmen in solving their special problems. If possible, the people involved in developing and conducting these special courses should be minority group members.

A work-study program designed specifically for prospective small business employees be developed.

If a training program is to attract large numbers of trainees and generate community support, it must be promoted by an intensive campaign to convince owner-managers and their employees that the training program will upgrade their business knowledge and skills. Every attempt must be made to gain widespread publicity for the program. Newspapers, television and radio announcements, trade publications, and even direct mail can be used to reach potential trainees. Trade and service organizations, chambers of commerce, local employment service offices, and various minority organizations should be enlisted to support the program.

If these recommendations are implemented, marginal firms can become prosperous, wages increased, and small business can make an even greater contribution to our economic growth. In one program that is being conducted in the Oakland public schools, the guidelines for operation that small businesses presented in the report are given major attention. In the light of recent social upheavals in California cities, the recommendations of the Peralta Survey take on added urgency and are receiving great interest from educators and officials throughout the state.

San Diego Survey. The small business survey conducted by the Bureau in cooperation with the San Diego Junior Colleges and the San Diego Unified School District tended to support the recommendations of the Peralta Survey. For the San Diego area, the recommendations were:

- Short-unit, free courses, especially in management subjects such as sales promotion
- Closer cooperation among agencies, employers, and schools
- Further studies of interest in business among the unemployed
- Greater distribution of information about junior college programs and city school adult programs
- Local area leadership by junior colleges

Homemaking Education--Business Education. The cooperative research study by the Bureau of Business Education, the Bureau of Homemaking Education, and the Sacramento Public Schools is in its second year of operation. The goal is to combine services to districts for a joint program to prepare homemaking and merchandising students for retailing occupations. A report on this project, entitled "Home Economics-Business Education: A Progress Report," has been completed. In this report, laboratory facilities for instruction in merchandising and retail sales, inservice meetings of teachers, and student screening plans are recommended.

Agri-Business Program. A pilot agri-business program, sponsored by the Bureau of Business Education and the Bureau of Agricultural Education, is being conducted by Orange Coast College. In this program, supervision and coordination of the work-experience phase is assigned to the coordinator of distributive education for whom time is allotted to visit employers and to evaluate student performance. Before a student is placed on a job, the coordinator determines by personal visit and consultation with the employer that a definite procedure for training exists and that each employer is apprised of the student's educational-occupational goal. Evaluation of the student's progress is made through personal consultation with the student, the employer, and the student's major-field instructor.

A YEAR OF PROGRESS

Progress in the field of business education is evidenced by (1) expansion of the program to meet existing and projected needs; (2) enrollment increase that approximates the increase in demand for trained workers; and (3) increase in the percent of all enrollees who successfully complete their courses. By these criteria, California business education programs progressed in the 1964-65 school year to their highest level. For the sixth successive year, the number of schools offering data processing had increased. And the number of classes in business education offered under MDTA had reached an all-time high. Enrollments in all business education courses had increased substantially, especially in business data processing courses where enrollment was 50 percent greater than in 1963-64. Previously, the enrollment in these courses had grown only 20 percent a year. Furthermore, the holding power of all courses was greater than ever before, for there was an appreciable increase in the percent of all students enrolled who completed the courses.

• • • Distributive Education

California public schools offer two types of distributive education programs: (1) the extension distributive education program for adults; and (2) the cooperative, part-time distributive education program. These programs are designed to provide the training required for employment in merchandising or in contacting buyers and sellers to further (1) the distribution of products of farm and industry to jobbers, wholesalers, retailers, consumers, and others; (2) the management, operation, and conduct of retail, wholesale, and service businesses; and (3) the use of special services.

The distributive education program for adults prepares adults for advancement in the occupations in which they are employed. In this program, the worker acquires technical instruction and skill training to supplement the knowledge and skill he has acquired in class and is acquiring through on-the-job experience. Courses designed to meet the needs for owners, managers, junior executives, buyers, department heads, salespeople, and other personnel who have contact with customers are offered by extension. There were 102,646 enrollments in these extension classes, an increase of 2 percent over the 1964 enrollments.

The cooperative part-time program offered by the high schools and junior colleges combines classroom instruction and supervised work experience to prepare students for careers in merchandising, selling, real estate, and insurance, and for advancement to management positions in these fields. Enrollments in the cooperative part-time program totaled 4,714 for the year, an increase of 77 percent over a five-year period.

These two programs have contributed to the efficiency of our marketing system and have provided splendid opportunities for gainful employment, but they are not sufficient in number or scope to meet the training needs of even one-third of the prospective employees in distributive occupations. In fact, only a beginning has been made in meeting the training needs in the distributive occupations, and these needs are multiplying at an ever increasing rate. At present

Table 1

Enrollment in Distributive Education Classes

Kind of class	Enrollment	
	1963-64	1964-65
Cooperative Part Time		
Diversified Distributive	1,247	1,629
Retail Florist	35	39
Real Estate	10	10
Retailing/Merchandising	1,320	3,006
Other	48	30
Sub Total	2,660	4,714
Part-Time Extension		
Management Training	14,283	8,638
Supervisory Training	10,691	6,627
Employee Training	20,580	16,053
Specialized Retailing Courses	4,470	4,181
Insurance	2,526	1,838
Real Estate	40,453	60,386
Finance	4,911	3,334
Traffic and Transportation	1,707	1,589
Sub Total	99,711	102,646
Total	102,371	107,360

Table 2

Enrollment in Business Classes for Adults

Type of classes	Enrollment	
	1963-64	1964-65
Day High School Classes	4,626	4,401
Evening High School and Evening Junior College Classes for Adults	70,502	71,490
Junior College Classes for Adults	6,489	8,008
Junior College Graded Classes	35,306	47,029
Total	116,923	130,928

California has more people engaged in the distributive occupations than in any other field. In the next ten years these occupations--located throughout the fields of finance, transportation, trade, utilities, communication, and the service trades--will grow rapidly and will offer hundreds of thousands of career opportunities to high school and junior college graduates.

• • • Business Data Processing Education

The Bureau of Business Education has assisted in the development and introduction of business data processing training programs in the junior colleges and adult schools. This year approximately 30 schools are offering such programs. In 1965 the Bureau supervised an expenditure of over $400,000 provided by the George-Barden Act, Title III, and this sum is being more than matched by California school districts.

Business data processing is perhaps the most rapidly expanding phase of business education. The use of computers has revolutionized many business activities and impelled the reorganization of countless offices. These shifts to the use of data processing procedures have caused many schools to plan and conduct business data processing programs. Enrollment in business data processing programs increases unusually fast; usually within two or three years a program that at first required only one instructor will require as many as five instructors.

For the sixth successive year, enrollment in the California data processing program increased more than 50 percent over that of the preceding year. And in this sixth year the number of classes has almost doubled, and night classes have been added in schools offering programs.

Table 3

Growth of the Training Program for Business Data Processing

School year	Number of communities in which classes were offered	Number of schools offering classes	Number of classes offered	Enrollment
1958-59	19	20	57	2,075
1959-60	31	35	119	6,308
1960-61	32	35	202	7,300
1961-62	32	37	253	9,204
1962-63	30	39	315	11,150
1963-64	38	47	603	16,923
1964-65	42	52	640	22,120

• • • Office Education

Office workers form the second largest employment group in the United States. In October, 1964, there were about 10,500,000 persons employed in the United States in clerical and kindred occupations. Over one million were employed in these occupations in California. This group constituted 14.8 percent of the total labor force. The number of persons employed in these occupations increased 750 percent between 1900 and 1950; from 1950 to 1960, the increase was 32 percent. It is predicted that between 1960 and 1975 the number of office workers will increase approximately 45 percent, or to 14 million.

Classrooms equipped with L-type desks that are wired for dictation are used for both shorthand and typewriting classes.

The growing complexity of modern business occupations requires a continuing increase in the functions performed by office workers and will result in an increase of the number of persons employed in office occupations despite the introduction of automated processes.

Areas of potential expansion of the office education program are found throughout society. Office workers are being employed in increasing numbers by industries such as banking, insurance, real estate, wholesale and retail trade, offices rendering transportation, communication, and public utilities and in government agencies. Office occupations offer satisfying and responsible careers with security and opportunity for advancement to thousands of high school and college graduates.

High School Enrollment Data. Enrollment data for office education is collected by the Bureau of Business Education every five years. The last survey was made in 1961, and the next survey of enrollments will be made in 1966.

During 1962, a comparative study of the 1956-57 and 1961-62 enrollments in the office education program in California public high schools showed that the enrollment increased from 251,572 to 373,843, or 49 percent in the five-year period. The enrollments in basic business courses in 1956-57 were 58,567, and in 1961-62 they were 84,376. If the rates of growth indicated by these figures prevail, it can be estimated that the 1963-64 enrollments in office education courses were approximately 448,500 and in basic business courses, 101,000.

Junior College Enrollment Data. A 1962 study of California junior college enrollments in accounting and business data processing courses; secretarial, clerical, and machine courses; and basic business courses indicated that there was a definite upward trend in enrollments. There were 14,007 enrollments in junior college accounting and business data processing courses in 1956-57 and 25,571 in 1961-62, a 76 percent increase. Those enrolled in secretarial, clerical, and machine subjects in 1956-57 were 34,751 compared to 49,945 in 1961-62, a 44 percent increase. Those in basic business subjects totaled 39,497 in 1956-57 and 69,495 in 1961-62, a 76 percent increase.

Based upon the rates of growth indicated by the figures cited, the estimated 1964-65 enrollments were as follows:

Accounting and business data processing	33,200
Secretarial, clerical, and machine subjects	59,000
Basic business subjects	90,000

Data processing is perhaps the most rapidly expanding occupational training area in business education. The use of computers has revolutionized many business activities and impelled reorganization of countless offices. The effect of these changes is evidenced by enrollments in the business data processing programs now in operation and the number of schools that are planning to offer such programs.

Students are given individual instruction on the various kinds of business machines commonly used in an office.

For seven successive years California has had substantial growth in the data processing training program. The enrollment for the current year is up more than 28 percent over that of the preceding year, 783 classes are in operation, and courses have been started in five additional schools. Also this year, through the resources of the Vocational Education Act, six colleges are being added to the list of those offering instruction in business data processing.

MANPOWER DEVELOPMENT AND TRAINING ACT

As a practical means of getting trained workers into the right job, the Manpower Development and Training Act has made a commendable contribution to California during its three years of operation by providing means of solving unemployment due to a lack of occupational skills. To take full advantage of this act requires close cooperation between the Department of Employment and the Department of Education. The Department of Employment initiates action by issuing a training order stating that a shortage exists for qualified workers in a given occupation in a certain area and that persons are available who will be capable of successful job performance in the occupation after they have had appropriate training. The Department of Education then arranges for such training to be offered.

One function of the Manpower Development and Training Program is to aid schools in developing educational projects; another is to provide for the recruitment and selection of candidates to participate in the projects and become qualified for employment. Many of the projects conducted under this program have been in the field of business education.

The booklet MDTA Business Education Projects, which is designed to supplement the MDTA Manual, is used by all educational agencies that offer training, supervision, or management in MDTA projects. MDTA Business Education Projects explains in detail the application of MDTA procedures and policies in the field of business education by presenting sample forms and project descriptions and by suggesting appropriate content and methods. It contains most of the information that a training agency needs in order to develop and conduct MDTA business education projects.

In California, MDTA business education training projects have been carried out in 90 occupations. Some of the projects were conducted by a single agency; others, by as many as a dozen different cooperating agencies. Both public and private institutions have participated. The occupations for which training has been offered are clerk (refresher course); clerk-typist; clerk-stenographer; general office clerk; hospital receiving clerk; secretary; clerical secretary; legal secretary; medical secretary; stenographer; technical stenographer; transcribing machine operator; typist-clerk; reproduction typist; duplicating machine operator; calculating machine operator; grocery checker; salesman; general salesperson; and bank teller.

Enrollments in business education courses offered under MDTA in 1964-65 were 5,931, an increase of 170 percent over that of 2,200 in 1963-64. The 1964-65 enrollment was more than four and one-quarter times the enrollment for 1962-63, the first year such courses were offered under MDTA.

Table 4

MDTA Business Training Programs

Program	Enrollment			Completions		
	1962-63	1963-64	1964-65	1962-63	1963-64	1964-65
Stenographic	493	878	1,887	308	375	829
Clerk-Typist	568	688	2,290	377	255	951
Miscellaneous	324	634	1,754	274	406	1,129
Total	1,385	2,200	5,931	959	1,006*	2,909**

*683 still in training as of June 30, 1964.
**An additional 1,539 still in training as of June 30, 1965.

• • • Effectiveness of MDTA Program

The following representative comments attest to the effectiveness of the MDTA program:

Trainees. "It has given me confidence in myself enough to know that I can make a better life for my children and myself."

"The value of such a thorough foundation provided me with good qualifications to find the job at which I'm presently employed."

An Employer. "This program of specialized schooling is very important because it provides the employer with people who really want to work--by showing good intentions through six months of voluntary study to achieve their goal."

A School Administrator. "The MDTA program and others like it have proven that persons previously unemployable, if they are properly trained, can be self-supporting and make a definite contribution to our economy. Because of dependent obligations, many of the students in the MDTA program would not have had another chance in life to better themselves. Now they are able to attend school, get a steady job, and earn a living. Eagerness to compete, to achieve, and to please is demonstrated day after day in our classrooms."

The Berkeley Gazette. "The Berkeley office of the California State Employment Service still has several openings in their stenographer and general office clerk classes under the Manpower Development and Training Act. . . . This is a marvelous opportunity offered by Uncle Sam for those who qualify."

The Sacramento Bee. "The Manpower Development and Training Act program now two years old, has helped 542 persons in Sacramento. This is disclosed in a report received by Congressman John E. Moss from W. Willard Wirtz, Secretary of Labor. It has provided a constructive solution to many unemployed citizens of the nation--to those who have lost jobs through technological change and to those lacking the skills needed in today's labor market, Wirtz noted."

Manager, Department of Employment, Palo Alto. "Evaluating the effectiveness of these programs, we can point with pride to our most tangible proofs--a low student dropout rate during training and a high percentage of placements directly related to training."

Manager, Department of Employment, Sacramento. "Since September, 1963, nine business education classes under the MDTA program have provided either basic or refresher training in stenography and general office subjects. Of a total of 169 trainees graduated, 103 have obtained employment within the occupational field of training."

Manager, Department of Employment, Oakland. "The business and commercial MDTA classes such as clerk typist, stenographer, and calculating machine operator have been successful. All the graduates of these course who have been able and available for work have been placed. Not all of them have been placed in the specific occupations for which they had been trained, but their skills have been so increased that they have become employable in related occupations at levels higher than their previous occupations."

INFLUENCE OF VOCATIONAL EDUCATION ACT OF 1963

A total of 245 Vocational Education Act projects in business education were funded during 1964-65; of this number, 158 were conducted in high schools and 87 in junior colleges and adult education programs.

Of $2,924,377 allocated to business education projects, $1,820,522 went to high schools; $819,475, for persons who have completed or left high school and are available for full-time study; $195,955, for persons already in the labor market; $58,230, for persons with special needs; $5,500, for construction; and $24,655, for ancillary services.

Most of the office education programs conducted by high schools were for the training of clerk-typists, general office clerks, and stenographers; however, several were for training bookkeepers, office machine operators, duplicating machine operators, key-punch operators, technical typists, transcribers, and reproduction typists.

The programs conducted in the junior colleges or in classes for adults included courses for training clerk-typists, general office clerks, stenographers, secretaries, insurance technicians, medical secretaries, technical secretaries, legal secretaries, accountants, technical publications specialists, court reporters, and medical records technicians.

Enrollment information secured from a study of the programs showed that 20,208 high school and 5,304 junior college students would complete training for the jobs specified in the projects under the Vocational Education Act in 1964-65.

GROWTH OF BUSINESS EDUCATION

Distributive education will continue to grow in California. The new provisions which permit preemployment training will contribute to this growth. Another contributing factor will be the growth of the distributive occupations. The sales and service occupations appear to offer the best opportunity for near full employment in the years ahead.

There will be a great increase in programs in the office area due to the passage of the Vocational Education Act of 1963. There has been great interest in developing programs under this act. Last year the Bureau received nearly 300 applications for assistance; this year, nearly 500.

The growth of business data processing programs has been phenomenal. This area of program development is in its infancy. As automation and technological change progress, business education will be forced to update its offerings to meet the needs created. California must expand business data processing programs during the years ahead.

The Manpower Development and Training Act programs will continue to expand to meet the shortage of workers in the business occupations. The congressional hearings were most complimentary to this act and the success of the programs operating under the act. It is not likely these programs will be terminated. Legislators talk of expansion and look to programs such as MDTA to help reduce unemployment and thereby relieve the pressure on social welfare programs.

• • • Growth Projection

Since so many factors must be considered, it is difficult to project the growth of business education in California. Some indexes for making such a projection follow:

- Since the business occupations account for about 50 percent of our labor force, it is reasonable to believe that business courses will continue to enroll more than 50 percent of those students in the federally aided programs under the Vocational Education Act, the Manpower Development and Training Act, and the like.

- Since more than 50 percent of high school and junior college graduates accept employment in the business occupations, enrollments in business subjects should continue to remain the highest of the elective subjects.

- Since our free enterprise system is dependent for survival upon well-trained employees, it is logical to assume that businessmen will help the schools to expand and improve their business education programs.

• • • Deterrents to Growth

Some of the deterrents to the growth of business education in California follow:

- The attitude, in the minds of some students, parents, teachers, and school administrators, that business education courses lack the prestige of academic courses.
- Lack of concern of some employers for occupational preparation. Some businessmen say, "Give the students a liberal education, and we will train them to do what we need." This attitude discourages students from taking business education courses.
- Insufficient funds available for certain districts to offer modern business education programs. Federal funds are available to help school districts finance the programs, but hundreds of schools cannot secure the financial assistance they need.

TEACHER TRAINING AND RECRUITMENT

Although teacher-training facilities in California are adequate, the state lacks teachers of business subjects because of a shortage of teacher-educators. Most teacher education institutions in California will soon conduct workshops for the preemployment and inservice training of vocational business teachers.

• • • Preemployment Training

The California state colleges, and the University of California can enter into contracts to offer courses in business teacher education. During the 1964 summer sessions, the University of California, Berkeley, and California State College at Long Beach offered courses under such contracts. Contracts with other colleges for such services are planned. In the meantime, teacher education is available from the following sources:

- Most state colleges offer teacher education courses in business education during their regular sessions.
- Classes for adults maintained by various school districts offer teacher education classes.
- The University of California Extension plans to offer teacher education courses for the 1965 school year.
- Orange Coast College, through the sponsorship of the California State Department of Education and the U.S. Office of Education, has continued in 1965-66 its teacher education in business data processing.

• • • Inservice Training

Projects being developed in California under the Vocational Education Act of 1963 for vocational business teacher education give inservice training, with full attention to such practical endeavors as the following:

- Discussion of the job analysis technique in building business education curriculums
- Use of new media in vocational business education
- Supervised work-experience programs for business teachers
- Field experience for teachers to keep them informed of current job requirements

• • • Recruitment of Teachers

When the supply of graduates of the cited programs proves inadequate, the present credential structure attempts to relieve the teacher shortage by permitting school districts to recruit secretaries and other office workers from business and industry as teachers. Some of these persons are doing fine jobs as teachers of business education, in both the office and the distributive areas.

An additional source of business teachers is the Bureau's file of names of candidates. The Bureau will refer these names to school districts, but the policy of the Department of Education is only to furnish a list of available candidates, not to recommend them.

RESEARCH STUDIES

The rapidity of the growth of automation in business practices and the current expansion of the whole field of business make it inevitable that research in business education will lag. A critical need for research exists in the following areas:

- The relations of basic education to occupational training programs
- The effects of automation and technological change on business education
- The development of a new pattern for business teacher education
- The use of programmed instructional materials in business education
- The use of team teaching and staff assistance
- The potentials in business education for disadvantaged youth and for gifted or talented youth

ADJUSTMENTS TO CHANGE

Several of the typical practices that are being employed to meet the needs created by change follow:

- Many schools are finding that stenography laboratories provide improved opportunities for students to learn shorthand and produce a higher percent of the students who attain the level of proficiency required to get entry jobs. Steno labs provide machines that can dictate at different rates. Students progress more rapidly and obtain higher degrees of skill because they get more dictation practice than one teacher could give.

- The use of motivational devices such as the skill builder has proved effective in helping students acquire greater skill than they would have acquired by traditional means.

- One of the most promising practices that has resulted from the Vocational Education Act is the cooperative planning of programs to meet the demonstrated needs of students and the business community. This planning has involved faculties of the schools, members of the business committees, representatives of the State Department of Employment, and specialists from the Bureau of Business Education.

  Programs of business education are subjected to constant evaluation, for this is an important means of determining their adequacy and appropriateness. One method of evaluation is the follow-up study of graduates; another is two-way communication between members of the advisory committee and business education teachers.

CHALLENGE AND CHANGE

The stated policy of the Vocational Education Section of the California State Department of Education was that, during the first two years the Vocational Education Act was in operation, emphases would be on testing policies and procedures. This policy was furthered by encouraging school districts to innovate and to experiment with new approaches to vocational business education and offering them maximum opportunity to do so.

• • • Program Interpretation and Promotion

Information concerning the Vocational Education Act was sent to all school districts and followed up with explanations given to groups or to individuals. Assistance was given to all districts that requested help in developing projects and in completing the applications for funding projects under the Vocational Education Act.

As part of the public information program conducted at state and local levels, the Department of Education published a brochure entitled Careers in Business, which presents information regarding the importance of business education; statements endorsing business education by school administrators, businessmen, a member of the State Board of Education, and the state president of the PTA; and names, pictures, and biographies of business graduates who had succeeded in business occupations. Office Education in California, another publication released by the Department, is designed to assist schools in developing programs to train students for entry jobs in office occupations. It contains job descriptions and suggestions for course sequences.

Youth Groups. Youth groups have been very helpful in creating student interest in careers in business. The Future Business Leaders of America and the Distributive Education Clubs of America conducted two successful conferences on business education. They also assisted the Bureau in developing two brochures: Careers in Distribution and Careers in Business.

The membership of Future Business Leaders of America is over 3,000 with some 300 chapters. Distributive Education Clubs of America has a membership of about 300 with some ten chapters. The Bureau is exploring means of obtaining the support of businessmen in the further development of Distributive Education Clubs of America. This group has a great potential for career planning in marketing and merchandising.

Facilities. The Vocational Education Act has been the impetus for improvement of facilities for business education in California schools. Many schools have obtained equipment and made better space arrangements through funds secured under Vocational Education Act projects. The continued need is to keep the equipment available and up to date,as well as to provide space to house the equipment and the activities required by the training programs.

The Bureau is encouraging school districts to plan new facilities by distributing its publication Planning and Equipping Business Education Classrooms, colored slides of business education facilities, and plans of business education classrooms.

• • • Studies

Napa Junior College conducted a study to determine the feasibility of establishing a distributive education program. Of the 73 business firms that replied to the questionnaire portion of the study, 68 indicated an interest in cooperating in the development of a distributive education program at the college. Replies to the questionnaire were received from 93 percent of the business firms contacted. A corollary survey of students, faculty, and administrators also showed sufficient interest to warrant a distributive education program. The findings of the study prompted Napa Junior College to plan to establish a distributive education program last fall.

• • • Experimental Programs

The Grossmont Union High School District conducted an experimental distributive education program in the area of food merchandising as a part of the district's summer school curriculum. Developed by a teacher-coordinator, the experimental program supplemented classroom instruction with valuable on-the-job training provided for students by local supermarkets. The new program was so successful that the district plans to continue it as part of its regular summer school offerings.

The two-year experimental program in retail merchandising conducted by Hiram Johnson High School, Sacramento Unified School District, and supported by the bureaus of business education and homemaking education has already been described. With some modifications, this program will be continued next year.

• • • Projected Program Activities

In the future the Bureau of Business Education must attempt to meet the following needs:

- The need for a workable plan to assist in curriculum development so that business education programs of school districts can keep pace with the changing needs of business
- The need to ensure the use of high-quality instructional materials in business education programs
- The need to develop a design for research and experimentation to improve business training programs
- The need to recruit, recommend, and train teachers who are qualified to do the best possible job in business education

Some promising areas of research and teacher education follow:

- Experiments in methods of training teachers and determining the proper balance of technical courses and methods courses
- Research in staff utilization, the use of programmed instruction materials, and generally efficient operation
- Use of new media in business education
- Refinement of tests to make them adequate prognostic instruments and of testing procedures to secure uniform results

New emphasis in business education should be given in the following programs:

- Distributive Education. The preemployment program should be further developed under both the George-Barden and the Vocational Education acts. The distributive education program has not grown in the past as it should, partly because of the regulation that only employed persons could be enrolled. However, this regulation has been eliminated and there is every reason to believe that the program will now begin to grow at a much more rapid pace than it has in past years.
- Office Education. The Vocational Education Act provides financial support for the office education area and permits prime attention to be given to building office education programs for specific entry jobs for both high school and junior college students.
- Business Data Processing. Although the increase in enrollment in business data processing programs has been phenomenal, only a beginning has been made in meeting the training needs in this field. Programs must be kept up to date despite the rapid changes taking

place in the use of data processing machines. Some less sophisticated educational programs may be offered in the high schools, while junior college programs may become more technical. In the years ahead there will be increasing need for close articulation between high school and junior college programs.

- Manpower Development and Training Act. Enrollments in programs conducted under MDTA have increased over 170 percent during the past year. The new challenge in this program will be to develop training programs which combine basic education with occupational preparation. More and more referrals from the Department of Employment require such training. A coordinated method of evaluation is also needed, in order to design effective program improvements.

- Leadership. The State Department of Education has responsibility to provide leadership in developing realistic business education programs for California. Interpretation of the various federal acts is an important part of this leadership role, but leadership must be more than this. School districts should be encouraged to experiment with new programs and new methods. The Bureau of Business Education should continually be working on the new frontiers of business education. Since the Bureau is definitely understaffed to meet responsibilities for supervision of the four federally aided programs, application has been made for more staff personnel. With the knowledge that the business occupations offer the greatest promise for near full employment in the face of growing unemployment, especially among youth, the future of business education in California promises to be exciting and challenging.

HOMEMAKING EDUCATION

DOROTHY M. SCHNELL
STATE SUPERVISOR

CHANGE AND ITS IMPACT

The responsibility of home economics education has been and continues to be great. And to meet this responsibility, the Bureau of Homemaking Education is emphasizing the importance of keeping the home economics program designed to meet society's needs. As a result of this emphasis, California schools have developed outstanding programs of home economic education. These programs are of two types: (1) to prepare youth and adults for responsibilities as homemakers and parents; and (2) to prepare youth and adults for entry level jobs that require home economics skills and knowledge.

Management of time, energy, and money in conducting their homes is important to all homemakers and of major importance to all who are also employed in occupations outside the home. The patterns of life common to our time demand training for youth and adults who will need to mesh family life and child care with gainful employment. Therefore, the focus of attention upon homemaking education has increased throughout the state. The total enrollments in homemaking education classes has increased as has the number of classes. The number of classes in courses designed especially for seniors has increased phenomenally. Courses designed to prepare youth and adults for entry-level jobs related to home economics were introduced for the first time during 1964-65.

CONTEXT AND GOALS OF HOME ECONOMICS EDUCATION

Home economics education in California secondary schools consists of two distinct programs. The concept of two programs--one training youth and adults for the job of homemaker, and one training youth and adults for gainful employment--has resulted from the passage of the Vocational Education Act of 1963.

The goal of vocational education furthered by both the Smith-Hughes and the George-Barden acts is to prepare youth and adults "for useful employment."

Table 1

Comparison of Selected Characteristics of the Two Programs in Home Economics Education Offered by California Schools

Program: Training for job of homemaker	Characteristic	Program: Training for gainful employment
Smith-Hughes, George-Barden acts: "Useful employment"	← LEGISLATIVE GOALS →	Vocational Education Act of 1963: "Gainful employment"
Improved skill as a homemaker	← PURPOSE →	Wage-earning
Every person	← PARTICIPANTS →	Trainees for specific entry-level jobs
All areas of homemaking education	← CURRICULUM →	Specific information and skills for the job
Credentialed teacher	← INSTRUCTOR →	Credentialed teacher with occupational competence
Semester, year, or several years	← DURATION →	Determined by job requirements
Sufficient for personal benefit as family member	← DEPTH →	Sufficient to attain specific job standards
None	← PLACEMENT SERVICES →	School, state agency, or advisory committee members
Desirable, difficult	← EVALUATION →	Essential

Programs in homemaking education designed to prepare individuals for the job of homemaker were thus made essential. These programs provide opportunity for the individual to gain personal benefits and, as a result, to strengthen his home and family life.

The goal of the Vocational Education Act of 1963 is "to prepare persons for gainful employment" and, in the case of home economics education, "in recognized occupations that utilize home economics subject matter and skills."

A comparative analysis of the characteristics of the two programs in home economics education offered by California schools reveals the characteristic differences in the programs (see Table 1).

STATEWIDE SERVICES

In addition to supervising vocational homemaking education programs offered by the high schools and in classes for adults and directly assisting schools to develop both homemaking education and gainful employment education programs, the Bureau of Homemaking Education provides certain other exceedingly important services. These include conducting workshops and inservice programs for homemaking teachers; cooperating with consultant and resource personnel of school districts and offices of county superintendents of schools; working with advisory groups; participating in state vocational education conferences; and developing and distributing publications, articles, curriculum guides, course outlines, and manuals. The bureau also participates in school evaluations and accreditations and provides consultant services in the planning of school facilities for homemaking departments. Specific services and activities of the Bureau of Homemaking Education during the year 1964-65 are listed in Table 2.

A YEAR OF PROGRESS

Vocational homemaking education continues to grow in California. In some aspects of the total growth of secondary education, vocational homemaking education maintains the same annual proportionate relationship, while in other aspects it is increasing noticeably.

• • • Growth in Vocational Homemaking

In 1960, 30 percent of the four-year high schools in California offered homemaking education programs that qualified as vocational homemaking education; in 1962, 33-1/2 percent of the schools; and in 1965, 37 percent of the schools. During the same period, the number of home economics teachers increased at about the same rate, but the proportion of the teachers of vocational homemaking education increased from approximately 25 percent to 33 percent. And there was a comparable shift of enrollments to vocational homemaking education classes (see Table 3).

Table 2

Educational Services and Activities of the Bureau of Homemaking Education, 1964-65

Areas of service or activity	Duration in days	Location	Attendance
Child Development and Family Relationships			
Workshop: Child Development	10	Long Beach State College	35
Principles of child care	8	Ramona High School, Riverside	26
Clothing and Textiles			
New developments in textiles	.5	Sierra High School, Whittier	104
New developments in textiles	.5	Fresno	76
"What's New With Pellon?"	.5	Fresno	32
Use and care of manmade fibers for the home	.5	Sacramento	140
Social, cultural, and economic aspects of clothing	2	Luther Burbank Senior High School, Sacramento	87
Modern fibers and fabrics	1	Chico	52
Curriculum Development and Revision			
Curriculum revision	3	Oceanside-Carlsbad Union High School District	68
Curriculum revision	.5	Escondido High School	5
Curriculum revision	1	Norte Vista High School, Riverside	24
Curriculum development	.5	Alvord Unified School District	8
Recent developments in homemaking education	.5	El Capitan High School, Lakeside	11
Curriculum development	.5	Indio	7
Objectives in homemaking education programs	.5	Fresno	8
Reimbursement standards for home economics education (new homemaking teachers)	.5	Fresno	8
Standards for homemaking programs	.5	San Diego Unified School District	75
Junior high homemaking education	.5	Cucamonga Elementary School District	12
Problems and progress in homemaking education	.5	San Diego	10

Table 2--Continued

Areas of service or activity	Duration in days	Location	Attendance
Curriculum Development and Revision			
Concept approach to home economics curriculum development	10	Chico State College	12
Developments in home economics subject matter	1	Chico State College	28
Education for Gainful Employment			
Workshop: Meeting Occupational Needs Through Homemaking Education	3	Fresno State College	66
Interpretation of VEA	.5	Kern County Union High School District, Bakersfield	21
Workshop for administrators on possible vocational education programs	.5	San Diego	60
VEA and home economics	.5	San Diego State College	21
Workshop for teachers: VEA	.5	Ventura	62
Workshop: VEA	.5	Riverside	25
Homemaking Education and VEA	.5	Barstow High School	8
Los Angeles County Guidance Conference: VEA	.25	Los Angeles	50
CASCD section meeting: VEA and Guidance in Home Economics	.5	Anaheim	8
VEA nursing aide program	.5	Artesia High School	4
VEA	.5	Santa Barbara	8
Workshop for staff of South Bay Union High School District: Possible VEA Projects Related to Home Economics and Procedures to Develop	.5	Los Angeles	6
Workshop for staff of Garden Grove Union High School District: Possible VEA Projects Related to Home Economics and Procedures to Develop	.5	Los Angeles	4

Table 2--Continued

Areas of service or activity	Duration in days	Location	Attendance
Education for Gainful Employment			
VEA and home economics	.25	Mt. San Antonio Jr. College	2
VEA program development for high schools in Los Angeles County	.25	Office of Los Angeles County Superintendent of Schools	4
Workshop: Focus on Gainful Employment in Homemaking Education	.25	Los Angeles Trade Tech Junior College	40
Home economics gainful employment programs in Alameda County	.5	Office of Alameda County Superintendent of Schools, Hayward	60
VEA	1	Imperial County, El Centro	15
Extension course: Training for Occupations Utilizing Home Economics	10	Riverside	41
VEA applications information	1	Office of Ventura County Superintendent of Schools	15
VEA applications information	.5	Office of San Luis Obispo County Superintendent of Schools	25
VEA applications information	1	Office of Santa Barbara County Superintendent of Schools	25
VEA applications information	.5	Office of Riverside County Superintendent of Schools	36
VEA	.5	Riverside Unified School District	23
VEA and homemaking education Professional Staff of Schools in San Diego County	.5	San Diego	9
VEA and home economics	.5	Buena Park High School	60
	.5	San Jose State College	88
	.5	California State Polytechnic College	24
	.5	University of California, Santa Barbara	43
	.5	Redwood City High School	25
	.5	Oakland High School	44
	.5	Sacramento	41
	1	Chico	26
	.5	Colton High School	31
	.5	San Diego	27
	.5	Julian High School	9

Table 2--Continued

Areas of service or activity	Duration in days	Location	Attendance
Family Finance			
Foods and nutrition			
"Sound Nutrition--the Answer to Quackery"	.5	Sacramento	38
Nutrition for homemaking teachers	1	El Centro	16
Refresher in nutrition	1	San Luis Obispo Junior High School	95
"Entertaining with a Flair"	1	Pacific Grove High School	90
Management: Equipment			
Refresher in Home Electrical Appliances	.5	North Salinas High School	77
Workshop: Gas Appliances; Decorating the Home with Light; Soaps and Detergents for Better Laundering; The Right Pots and Pans	.5	Sacramento	69
Selection and management in the use of electrical equipment	.5	Sacramento	83
Senior Homemaking Education			
Curriculum development in senior homemaking	5	California State Polytechnic College, San Luis Obispo	7
Workshop: Psychosociological Dynamics of Marriage and Family Life Education	5	California State Polytechnic College, San Luis Obispo	35
Extension course: Adolescent Values in an Open Society	5	University of California, Davis	80
Stimulating Instructional Leadership			
Advanced Economics Related to Teaching of Home Economics--Family Finance	9	Fresno State College	19
Recent developments in homemaking education	.25	Whittier High School	17
	.25	Santa Ana Valley High School	16
	.25	Huntington Beach Union High School District	12
	.25	Palmdale High School, Lancaster	7

Table 2--Continued

Areas of service or activity	Duration in days	Location	Attendance
Stimulating Instructional Leadership			
"New Paths for Home Economics"	.25	Cupertino High School	9
"New Paths for Home Economics"	.25	Ventura	20
"New Paths for Home Economics"	.25	Santa Cruz County school districts	7
Seminar: "New Paths for Home Economics"	1	Palo Alto Unified School District, Sunnyvale	15
Vocational education class for General Administrative Credential candidates: "New Paths for Home Economics"	.25	California State Polytechnic College, San Luis Obispo	50
Preview of the film on homemaking education produced by Sears, Roebuck Foundation: Keys to the Future	.5	University of Southern California, Los Angeles	400
Workshop: Programmed instruction	10	California State Polytechnic College, San Luis Obispo	6
Home economists in business who offer educational services	.5	Office of Alameda County Superintendent of Schools, Hayward	30
"Relating FHA Experiences to Program Planning in the Homemaking Program"	.5	Asilomar, Pacific Grove	240
Monthly meeting for local supervisors of homemaking education, Los Angeles County: "Current Happenings of Concern to Homemaking Education:	4	Los Angeles	8
County teachers' organization meeting	.5	San Diego	11
Workshop: Topics in home economics; evaluation of home economics	15	Fresno State College	8

Table 3

Vocational Homemaking Education in California High Schools 1960-61--1964-65

Category	School year				
	1960-61	1961-62	1962-63	1963-64	1964-65
High schools					
Number maintaining grades nine through twelve	914	951	959	991	1,019
Number maintaining vocational homemaking programs	282	296	312	355	376
Percent of schools maintaining vocational homemaking programs	30	31	33	37	37
Homemaking teachers (high school)					
Number teaching homemaking education	2,274	2,297	2,265	2,441	2,544
Number teaching vocational homemaking education	544	565	609	709	757
Percent of teachers teaching vocational homemaking education	24	25	28	29	33
Classes in homemaking education taught in schools maintaining vocational homemaking education programs					
Number of classes in Homemaking I	969	988	1,018	1,215	*1,077
Number of classes in Homemaking II	541	548	570	596	* 594
Number of classes in Homemaking III	305	319	320	368	* 342
Number of classes in Homemaking IV	114	142	127	122	* 153
Number of classes in Senior Homemaking	172	170	208	249	316
Enrollment in grades nine, ten, eleven, and twelve					
All students (female and male)	785,244	850,943	931,864	1,014,316	1,063,229
Percent in vocational homemaking education	6.18	5.91	5.74	6.14	6.86
All female students	384,949	416,988	455,049	496,159	518, 094
Percent in vocational homemaking education	12	12	12	12	14
Enrollment in vocational homemaking education--grades nine, ten, eleven, and twelve					
All students (female and male)	48,557	50,346	53,565	62,322	72,982
Female students	47,607	49,591	52,492	61,217	71,761
Male students	950	755	1,073	1,105	1,221

*Number of classes reported by 278 of the 376 schools offering vocational homemaking programs

• • • Senior Homemaking

The most significant development in the vocational home economics education program during 1964-65 was the 55 percent increase in the number of classes in Senior Homemaking. This was the greatest increase since 1956, when the bureau began promoting Senior Homemaking; however, enrollments in this course have been increasing steadily since the 1961-62 school year. This growth has been due in large part to increased school enrollment, the reputation of the course, and inservice education of teachers.

Additional reimbursement for courses in Senior Homemaking has been part of California's vocational homemaking education program since 1956-57. However, it should be noted that there had been a gradual increase in the number of schools offering such courses before this reimbursement was provided. Apparently the spurt in 1964-65 resulted more from the reputation of the course and inservice teacher education than from the additional reimbursement. True, it has been necessary to increase the number of classes in every subject to accommodate the enlarged enrollment, but the extent of increase in the number of classes for elective courses, such as Senior Homemaking, depends to a great extent upon the reputation of the courses. This good reputation has been furthered by the teachers being helped to plan the course and to gain confidence in their ability to use proven and productive instructional techniques. The Bureau of Homemaking Education has helped teachers to make these advances by conducting workshops devoted to the best practices in Senior Homemaking. The first of these workshops was conducted in the summer of 1963 and others throughout the 1963-64 school year.

Growth of Senior Homemaking in Schools Without Vocational Homemaking Programs. Senior Homemaking is offered by many schools that do not maintain vocational homemaking programs as well as by schools that maintain such programs. Since data regarding curricular offerings are collected from all California high schools only once each five years by the State Department of Education, the number of schools that begin offering a particular course in the intervening years must be estimated on the basis of the past rate of growth. By the next data collection time (1966-67), it is estimated that 279 schools, or 39 percent of the schools with twelfth grades, will be offering a course in Senior Homemaking. In contrast, only 13.5 percent of the schools with twelfth grades were offering Senior Homemaking when data were collected in 1956-57. Both the present statistics and the projected statewide growth of Senior Homemaking indicate that inservice teacher education, studies, and evaluation should be continued by the Bureau of Homemaking Education.

Future of Senior Homemaking. The Bureau of Homemaking Education identified the need for courses especially designed for seniors through a statewide study, made ten years ago, in which student opinion regarding interest in homemaking education was collected. This study showed that more students in the twelfth grade than in the ninth grade were interested in courses that included instruction in (1) preparation for marriage; (2) furnishing a home; (3) care and training of children; and (4) saving time, energy, and money in the conduct of the home. As a result of this study, the Bureau of Homemaking Education encouraged high schools to offer such a course, and many of the schools did. As these courses grew both in number and enrollment and developed highly favorable reputations, other groups.including members of the State Legislature who are concerned with instabilities in family life in California, expressed interest in having a higher percent of all students prepare for marriage and family responsibilities.

The increased enrollments, administrative and community support, and teacher participation in inservice education for Senior Homemaking are all indications that this course meets a need that youth identified and that has been growing rapidly since 1955.

• • • Home Projects

Projects related to clothing and textiles and to foods and nutrition continue to lead the list of home projects selected by students. Next in order are housing and home furnishings, child development, and home management projects (see Table 4).

Discussions or talks with parents continue to be employed by homemaking teachers as the means of checking on students' progress with their home projects. Contemporary life in California precludes the sole use of the time-honored home visitation plan for teacher supervision of home projects. Telephone calls, scheduled conferences, and impromptu talks with parents at school events and in day-to-day community meetings have to be relied upon by teachers as ways of keeping informed regarding students' progress with projects and determining when home visitations are essential (see Table 5).

• • • Gainful Employment Education

A second program in home economics was launched in California during the 1964-65 school year--that of training students for gainful employment in occupations in which knowledge of home economics and facility in using home economics skills are valuable assets. The Vocational Education Act of 1963 provided the stimulus for this kind of occupational training program in high schools, junior colleges, and adult schools.

In the first year (1964-65) that VEA funds were made available under Public Law 88-210, a total of 29 applications for occupational training projects related to home economics were approved in California. Of this number 23 were designed to train for specific entry-level jobs, and six for curriculum development and studies preparatory to offering occupational training programs related to home economics.

The majority of the gainful employment programs were in food service training for entry-level jobs in bakeries, coffee shops, cafeterias, diners, hotels, and restaurants. The programs varied in the jobs for which training was provided, including such specifically identified jobs as waiter, waitress, cashier, dishwasher, busboy, hostess, salad-maker baker's helper. A few of the food service programs are of two years' duration, and students enrolled in them will not be seeking employment until they have completed the second year of training.

Table 4

Vocational Homemaking Education Home Projects
1960-61--1964-65

Type of project	Number of projects conducted				
	1960-61	1961-62	1962-63	1963-64	1964-65
Child development	6,158	8,395	8,566	9,389	9,434
Clothing and textiles	23,659	24,633	26,310	30,927	33,111
Foods and nutrition	19,209	21,719	22,395	27,481	28,016
Family health	2,214	3,063	2,860	4,411	3,141
Family relationships	3,261	5,239	4,547	6,582	6,581
Housing and home furnishings	9,021	10,379	11,060	13,692	13,759
Home management	5,240	7,361	7,160	10,059	8,731
Total	68,762	80,789	82,898	102,541	102,773

Table 5

Supervision and Evaluation of Vocational Homemaking Education Home Projects
1960-61--1964-65

Supervision and evaluation procedure	Number of times employed				
	1960-61	1961-62	1962-63	1963-64	1964-65
Teacher-parent-student conferences					
At student's home	3,223	3,274	3,277	3,183	3,258
At school or other locations	9,326	10,026	10,109	12,200	11,126
By telephone	4,550	4,993	4,750	4,953	5,634
Total	17,099	18,293	18,136	20,336	20,018

The Food Service Training Program at Pacific High School in San Leandro varies with the job skills required.

The second largest number of projects approved were for programs designed for training homemaker assistants. This training included general cleaning, child care, laundry, care of clothing, and general assistance to homemakers. Teachers in this program worked cooperatively with the homemakers in the area served by the school who made their home available for the students to have appropriate preemployment experience.

Other gainful employment programs offered in high schools included training for workers in child-care services, commercial clothing service workers, workers in centers for the aged, child day-care-center assistants, and nursing aides. The course in Commercial Clothing Services was designed to develop marketable entry-level skills which would provide job opportunities in retail shops, in pattern departments or stock departments of stores, and in dry cleaning shops as tackers, seamstresses, counter attendants, hand pressers, or markers. Instruction was also directed toward employment in homes to maintain, repair, and alter clothing. Programs for child-care-center workers were designed to train students in the skills needed for employment as teachers' assistants, assistants to a day-care-center worker, or child care in the home.

During 1965-66 these first gainful employment programs are being evaluated. This evaluation will reveal the number of students who participated in the programs and secured employment as a result of the training they received.

In June, 1965, a total of 58 schools submitted applications for occupational training programs related to home economics that were to be conducted in the 1965-66 school year.

• • • MDTA Projects

Manpower Development and Training Act projects in which home economics subject matter and skills were taught as preparation for gainful employment were continued as Bureau of Homemaking Education activities. The number of such programs conducted in 1964-65 was greater than it was in 1963-64 and apparently will continue to increase. The State Department of Employment has requested that training be provided in the occupations of motel maid, home health aide, home attendant, housekeeper, companion to the elderly, general maid, and cafeteria worker. Some of these training programs have been completed, while others are either currently in operation or in the process of being established through school districts.

Several of the requests for MDTA training projects received in 1964-65 were multioccupational; that is, they included provisions for meeting the training requirements for each of two or more occupations. For example, an employment office in one metropolitan area included, in one proposed project, training for housekeepers, maids, home health aides, and companions to the elderly.

A 1/4 inch scale figure is used to illustrate the principles of designing and drafting patterns at a recent inservice meeting for clothing teachers in Sacramento.

Trained housekeepers are quickly absorbed into the labor market, and it is difficult to complete follow-up of the trainees and, thus, evaluation of the training program. Persons trained in the housekeeper occupation are in constant demand, but recruitment of trainees continues to be a problem.

There is need for home health aides, as indicated by the number of proposals received. Some localities have requested that as many as 10 or 12 classes be conducted to train the health aides needed to meet employment demands. Recruitment of trainees for these classes is not as difficult as it is for classes in housekeeper occupations.

• • • Adult Education

The largest number of classes for adults in homemaking education continues to be in clothing and textiles, with the next largest number in child development. Since 1960, the number of classes in each of the various areas of homemaking education has remained fairly constant, with the exception of classes in family relationships, which have increased from 47 in 1963-64 to 89 in 1964-65 (see Table 6).

Inservice teacher education activities arranged by the Bureau of Homemaking Education for teachers of adult homemaking classes continued to be limited to topics connected with the teaching of clothing construction. During the 1964-65 school year, a total of 747 teachers attended ten inservice meetings held in three major geographic centers for teachers of clothing in adult homemaking education. Some outstanding presentations on clothing construction were made by representatives of nationally known companies. Inservice workshops in clothing construction continue to be in demand.

A very successful play school is conducted in Clovis High School while parents meet with elementary teachers in prekindergarten sessions.

Table 6

Adult Homemaking Education Courses
1960-61--1964-65

Course emphasis	Number of classes conducted				
	1960-61	1961-62	1962-63	1963-64	1964-65
Child development	682	603	582	614	616
Clothing and textiles	1,207	1,227	1,192	1,182	1,258
Family health	13	18	10	13	10
Family relationships	59	57	58	47	89
Foods and nutrition	48	57	67	57	54
Home management	26	19	15	16	18
Home furnishings	136	130	116	127	137
Total	2,171	2,111	2,040	2,058	2,182

Table 7

Adult Homemaking Education Enrollments and Teachers Employed in Programs
1960-61--1964-65

Category	Number enrolled				
	1960-61	1961-62	1962-63	1963-64	1964-65
Students enrolled					
Female	94,887	94,170	88,787	95,954	*45,624
Male	4,011	3,908	3,377	3,340	* 1,529
Total	98,898	98,078	92,164	99,294	*47,153
Teachers employed					
Total	850	707	834	855	916

*Reduced enrollment figure produced by new accounting procedure does not show the picture in relation to other enrollment figures.

• • • The Sears, Roebuck Foundation Projects

For more than a decade the Sears, Roebuck Foundation has made financial assistance available for classroom instructional projects in schools that maintain vocational homemaking programs. This assistance has often been used to improve the appearance of some part of the homemaking department or rooms in the school, or to prepare materials for a temporary nursery school to enable high school youth to observe and work with young children. A few schools have used the assistance to provide outdoor living areas; a few, to finance luncheons to which key community people were invited to hear students describe what they were doing and learning in their homemaking classes. However, in only one year since 1960 have more than 4 percent of the schools with vocational homemaking programs financed projects with funds from this foundation (see Table 8).

Table 8

Sears, Roebuck Classroom Projects Conducted in Schools Offering Vocational Homemaking Programs 1960-61--1964-65

Type of project	Number of projects conducted					Total
	1960-61 (282 schools)	1961-62 (296 schools)	1962-63 (312 schools)	1963-64 (355 schools)	1964-65 (376 schools)	
Interior decoration	8	10	2	5	4	29
Play school	3	10	5	3	3	24
Public relations	-------	2	-------	1	------	3
Teaching aids	1	-------	1	------	------	2
Grounds beautification	-------	2	1	1	2	6
Civil defense or family health	-------	2	2	------	1	5
Consumer education	-------	-------	-------	-------	1	1
Total	12	26	11	10	11	70
Percent of schools	4	9	4	3	3	-----

• • • Future Homemakers of America

A chapter of the Future Homemakers of America may be organized in any high school that maintains a homemaking education program. The number of chapters (approximately 280) and the number of members (approximately 9,000) have remained approximately constant (see Table 9).

Table 9

Chapters and Members of Future Homemakers of America
1960-61--1964-65

Unit	Number				
	1960-61	1961-62	1962-63	1963-64	1964-65
Chapters	279	272	280	283	280
Members	9,354	9,452	8,824	8,780	8,273

Scholarship Program. One of the FHA state projects is the provision of a scholarship fund for members who graduate and wish to continue to study home economics in college. The California Young Homemakers Association also makes funds available for this purpose. Favorite Foods Recipes, Inc., began to make an annual scholarship grant available to the California Future Homemakers Association in 1964-65. In addition, an anonymous donor has made funds available since 1957 for former FHA scholarship holders to complete their college training as homemaking teachers.

Scholarship grants awarded by the statewide FHA organization since 1960 have enabled 16 FHA members to begin their study of home economics in college; and four, to complete their training as home economics teachers (see Table 10).

• • • Community-Service Project Program

Five community-service projects designed to beautify the school grounds were approved and funded during 1964-65 from the Sears, Roebuck Foundation grant to the California Association of the Future Homemakers of America.

• • • Chapter Service Project

A VISTA volunteer set up a program in a Spanish-American colony in Parlier, Fresno County, to help 95 Spanish-speaking preschool children to develop readiness to attend school. Each of several classes that met twice weekly for an hour in the local elementary school after regular school hours enrolled from six to ten children. Members of the Parlier FHA chapter worked as "teacher-aide teams" to assist the VISTA volunteer. The program was devoted

Table 10

Scholarships Granted by Statewide Organization
of Future Homemakers of America
1960-61--1964-65

Unit	Number of scholarships granted					
	1960-61	1961-62	1962-63	1963-64	1964-65	Total
Lower-division freshman	2	4	5	3	2	16
Upper-division freshman	2	-------	-------	------	2	4

to learning the use of books, educational games, and arts and crafts materials and participating in creative play. The FHA girls gained experience in teaching and child development and enriched their lives by participating in this program.

• • • Inservice Teacher Education

Inservice education for high school homemaking teachers was provided by the Bureau of Homemaking Education in workshops, classes, and conferences. Of these projects, 13 were devoted to instructional leadership procedures; 37 to education for gainful employment; 13 to curriculum development; 6 to clothing and textiles; 4 to management; 4 to foods and nutrition; 3 to senior homemaking education; and 2 to child development and family relationships.

In addition, members of the staff of the bureau participated in locally organized inservice programs and aided professional organizations to develop and conduct inservice meetings. The members of the staff also visited schools to assist them with their inservice education, and they gave any assistance they could through correspondence, telephone conversations, and conferences with individual teachers, administrators, and curriculum directors. Each year the bureau endeavors to provide inservice training as necessary to meet needs for such training, regardless of whether the need is limited to one course or reaches into many or all phases of the program.

The introduction of VEA courses to prepare high school youth for employment in entry-level jobs in which home economics skills and knowledge are necessary resulted in the bureau's maintaining a major effort to further inservice training programs for teachers of the classes. A total of 636 home economics teachers and many local directors of vocational education attended workshops, conferences, and meetings held for this purpose. The bureau also conducted 20 meetings at central locations throughout the state to inform home economics supervisors and teachers regarding the Vocational Education Act of 1963 and its application to home economics. Workshops were conducted on topics such as "Meeting Occupational Needs Through Homemaking Education," "Focus on Gainful Employment in Homemaking Education," and "Training for Occupations Utilizing Home Economics."

Inservice programs for teachers in the gainful employment program related to home economics were conducted in local and regional meetings and in two summer workshops. Participants in the two workshops were selected senior high school and junior college home economics teachers who received tuition scholarships from the Sears, Roebuck Foundation. The workshop held in San Francisco was attended by 41 teachers; the one held in Los Angeles, by 38 teachers. In addition to conducting these workshops for teachers, the bureau also conducted a workshop for local supervisors of homemaking education.

The number of schools applying to conduct projects in gainful employment education related to home economics under VEA increased from 29 in the spring of 1964 to 58 in the spring of 1965. This increase is evidence of one value of the meetings and workshops.

Many factors play a part in the growth of new programs in homemaking education, but school administrators report that the inservice education opportunities provided for homemaking teachers by the bureau are of major importance in improving existing programs and in developing new ones. An ad hoc committee composed of school administrators, supervisors, and homemaking teachers called together by the bureau in January, 1965, recommended that funds available for reimbursing vocational homemaking education programs be used primarily for inservice education.

The bureau held an inservice education meeting for all home economics instructional personnel in California junior colleges in the spring of 1965 in Fresno. The program included a panel discussion among top-ranking junior college administrators, group discussions, and individual presentations. This was the first state meeting of junior college personnel ever held by the bureau, but others will be held in the future because the participants expressed keen interest in the ideas presented and confidence in the values they received.

• • • Preservice Teacher Education

A total of 26 California teacher education institutions prepare homemaking teachers. In addition, many who have done their college work in institutions other than those in California receive credentials through direct application to the Credentials Office, State Department of Education.

The Bureau of Homemaking Education aided nine teacher education institutions by consulting with student teachers and classes in home economics education regarding the various phases of the reimbursed vocational homemaking programs being offered by California high schools.

Each year the students in training as homemaking teachers at each teacher education institution are invited to attend the annual state FHA meeting, held in October, and to set up an exhibit that interprets the training program at their college. Both the number of exhibits and the number of students in attendance have increased each year.

Students preparing as homemaking teachers are also invited to attend the spring sectional meetings of FHA. In 1965, a regional supervisor asked the students at one of the host colleges to plan and conduct a program to interpret training program events in the life of a homemaking teacher. The students accepted the invitation and formed a committee to work with the supervisor and the FHA section program planning committee to design a program of special interest to the FHA girls. This program, which was primarily devoted to demonstrations, gave the students valuable experience; for as potential FHA chapter advisers, they need to be familiar with the problems encountered in conducting an FHA program that is related to the instructional program in homemaking education.

The bureau's major effort to further preservice teacher education resulted in a meeting attended by the chairmen of the home economics departments of all California teacher education institutions and the teacher educators in these departments. Preparation programs for home economics teachers and credential requirements were studied.

• • • Instructional Materials

The Bureau of Homemaking Education developed and distributed the following articles in 1964-65: "Gainful Employment Education Related to Home Economics in California Schools," which first appeared in the Illinois Teacher of Home Economics, a publication of the University of Illinois and "Home Economics Defined for Vocational Education," published in California Education. The bureau also published the brochure, "What is Senior Homemaking?" which was financed by the Sears, Roebuck Foundation.

• • • Experimental Programs

Training Teaching Aides. An experimental program designed to train teaching aides was introduced by Fresno City College at the beginning of the 1963-64 school year and continued throughout the 1964-65 school year. The success of this program was determined by evaluating the work of the students as they served in schoolrooms as teaching aides. The results of the evaluations revealed wherein changes should be made in both the instructional and on-the job phases of the program. And they also made apparent the need for exceptionally strong inservice education programs for teachers. It should be noted, however, that the program was highly successful and that Fresno City College is considering the establishment of a program of sufficient scope to train teaching aides for service in situations where any one of several different subjects is taught.

Merchandizing. An experimental training course in merchandizing, started in Hiram W. Johnson Senior High School, Sacramento, at the beginning of the second semester of the 1963-64 school year was continued in the 1964-65 school year. This course was designed to prepare students for employment in entry-level jobs in merchandizing. Instruction was given by a teacher of homemaking and a teacher of distributive education working as a team. The value of the course is evidenced by the fact that it will be retained in operation. However, the results of the evaluations have revealed wherein improvements in the content of the course and the instructional procedure are needed. These improvements will be made at once, and others will then be made as need for them is revealed through the evaluation procedures that will be continued as an integral part of the instructional program.

• • • Program Interpretation and Promotion

Publications. The staff of the Bureau of Homemaking Education has prepared and published articles dealing with the salient features of the program and worked cooperatively with organizations that produce materials that are designed to promote the home economics programs offered by California high schools. Clarification and interpretation of the two types of programs in home economics which are a part of vocational education was accomplished in part by an article published in the May, 1965, issue of California Education, entitled "Home Economics Defined for Vocational Education." Other phases of the state's activities in gainful employment education related to home economics were also reported in California Education. For example, an article describing experimental work done in a Fresno high school under the supervision of the Bureau of Homemaking Education on the training of homemaker assistants was published in the January, 1965, issue.

An article, published in the Illinois Teacher of Home Economics, Vol. VIII, No. 4, 1965, described the status of gainful employment education related to home economics in California during the first year of operation under the Vocational Education Act of 1963.

A brochure designed to interpret and promote classes in Senior Homemaking published in cooperation with the Sears, Roebuck Foundation late in the spring of 1965. The brochure, "What is Senior Homemaking?" is available to schools interested in developing new classes for seniors and to schools operating classes in Senior Homemaking that wish to interpret the course to school counselors, parents, school board members, and others who are interested and may profit from having the information. The brochure will also be used in workshops and inservice teacher education activities to explain why Senior Homemaking is important, who may enroll, what is taught, and how students and parents evaluate these classes.

National recognition of, and commendation for, the bureau's publication, "Space and Equipment for Homemaking Education in California High Schools," has increased this year after it came to the attention of school architects in attendance at national meetings. Several state supervisors of homemaking education requested that copies be sent to architects working on large school planning developments.

Publicized Activities. The Bureau of Homemaking Education encouraged California high schools to conduct activities that were designed to direct attention to the home economics program and helped them to plan ways the activities might be published to inform the public regarding the home economics program.

The home economics program offered by California schools contains many activities that merit wide publicity. These include the activities of local chapters of Future Homemakers of America, the home projects related to classroom instruction, and many others.

The staff of the bureau prepared scripts and aided in organizing members of FHA chapters to present a daily 15-minute program during FHA week on radio station KSLX at California State Polytechnic College, San Luis Obispo. The KSLX farm reporter said:

> It was a real pleasure working with the leaders and students from the Future Homemakers of America and using my farm program to tell the public about the Future Homemakers of America.
>
> The public was most impressed, not only by the information about such a fine organization but also by the enthusiastic and intelligent young people in FHA and the far-reaching opportunities and satisfaction in belonging to such an organization. I am looking forward to this again next year.

The gainful employment education programs related to home economics have received much publicity through local newspapers, primarily because they are new types of training offered for the first time within school districts, but also because there is high interest currently in education that makes people employable.

Public interest in occupational training is also stimulated by members of the advisory committees who help to develop training courses and establish classes. Committee members play an important public relations role in interpreting and promoting training classes to prospective employers and to the public in general.

• • • Leadership

Program participation at two national meetings and at several kinds of state-level professional association and committee meetings provided opportunities for the bureau staff to describe developments related to home economics.

Staff members also participated on two interdepartmental committees which provided opportunities for creative work this year. One committee, composed of personnel from several public and private agencies was interested in the development of training programs for homemaker services. The other committee composed of personnel from several state agencies considered a proposal for preparing both juvenile and adult parolees for employment.

The advent of the Vocational Education Act of 1963 has brought about a great need for individuals and groups working in vocational education to become acquainted with each other's programs; the occupation of "vocational educator" has arrived. Few persons qualify at present, because most persons working in vocational education have been based in one area of specialization and know little of the others. For homemaking education, this situation presents a

Homemakers Assistants learn to prepare and serve refreshments and family meals in the pilot class of McLane High School, Fresno.

challenging and important opportunity. The work of explaining thoroughly the differences between the program of homemaking education that prepares for the job of homemaker and the program of gainful employment education that uses home economics subject matter and skills to prepare youth and adults for gainful employment in recognized occupations was both informative and promotional. During 1964-65 more colleagues in vocational education, more local directors of vocational education, more school administrators and counselors than ever before became aware of the kinds of educational programs possible within the home economics departments of the school districts.

The importance of training youth and adults for the job of homemaker will always remain a prime task and challenge for the field of home economics. Participation of home economics educators in gainful employment education has begun to increase the sincere interest of their colleagues in vocational education in the importance of training in homemaking education for youth and adults. As the number of women in the labor force continues to grow, their need for training for the dual role of homemaker and wage earner is increasingly evident. Without specific knowledge and skills, they are unable to hold jobs. Without information and skills in homemaking, they find it very difficult to manage their homes, families, finances, and jobs all at the same time.

• • • Pilot Programs

Continually the staff members of the Bureau of Homemaking Education are studying the best use of available vocational education funds. During 1964-65, a staff committee was assigned to study the effects of the 1956-57 revision for reimbursement of secondary-level programs and of the Vocational Education Act of 1963.

Ability to perform home laundry tasks is part of the training for Homemakers Assistants in Fresno's McLane High School.

An ad hoc advisory group composed of school administrators, local supervisors, and homemaking teachers brought together in January, 1965, produced data from which the committee was able to develop a proposed plan of reimbursement for both secondary- and adult-level classes in homemaking education. The proposed plan was submitted to a second ad hoc advisory group in the spring of 1965, resulting in a revised plan of reimbursement based upon inservice education and program emphases upon human development and consumer economics.

Three schools active in these preliminary steps and representative of the locales, sizes, and organization of high schools in the state will serve as pilot schools for the plan during 1965-66. The trial period will test the feasibility of the plan, difficulties teachers have in meeting its requirements, and adjustments necessary before the plan is used statewide.

LOOKING AHEAD

The challenge of the task ahead is the greatest this staff has ever known. The needs for program development and refined operational techniques almost defy evaluation for priority. Resources and energy must be garnered as never before. Work to extend Senior Homemaking courses throughout the state needs to continue and to be accelerated through specific inservice education. Inservice education for the gainful employment education program related to home economics is an imperative sequel to the inservice work carried on so vigorously during 1964-65. In fact, study is needed of curriculums to train youth for the same entry-level jobs in various parts of the state, to bring reasonable uniformity to the training, and thus to assure general advice and acceptance by industries and potential employers. The speed of program development has not necessarily accomplished these steps; the staff needs to prevent misunderstandings and conflicting standards in training. There is need for assembling, relating, and interpreting facts and for developing program materials and operational procedures. The professional staff must avoid the lag experienced in educational leadership and practice in the past.

• • • Challenge and Change

Since December, 1963, when Congress passed the Vocational Education Act of 1963, the new potentials for home economics education have become increasingly apparent.

Homemaking education must be continually sensitive to societal change to help people to live more healthfully and easily amid increasing complexity. There is evidence of some or many changes in these directions.

Change in education has been historically slow; but change in vocational education, including homemaking education, must come rapidly during the latter part of the 1960s if the needs of the people are to be served. Educators in fields of science, mathematics, foreign languages, and English have all learned this lesson and have been hard at work improving their educational programs.

Leadership in homemaking education is devoted to accomplishing a shift in program emphasis from food preparation and clothing construction to the understanding of child development, personal relationships, family economics, and home management problems. Increasing provisions of opportunities for high school youth to study little children and the growth of classes for seniors that emphasize family economics and child development are evidences of progress in this shift of emphasis.

Teachers need continual specific information and stimulation to accomplish needed change. Inservice education provides them. The impact of specific inservice education is evident in successful programs throughout the state.

One of the greatest challenges is represented in the Vocational Education Act of 1963 provisions to prepare youth and adults for gainful employment in occupations that use home economics subject matter and skills. This use of home economics education was not precluded by former vocational education acts, but the interpretations made for home economics stressed training programs for the job of homemaker. Clarification of the two distinctly different programs was a primary concern of the Bureau of Homemaking Education during 1964-65.

• • • Studies Needed

An increased need exists for studies on which to base future program development and operations. Some of the studies imperative for the immediate year ahead include the following:

- Evaluation of enrollment data available for the first time in the vocational homemaking education program to identify factors affecting Senior Homemaking courses and to guide staff activities and priorities
- Study of the preparation of teachers of Senior Homemaking
- Study of enrollments in gainful employment education classes
- Study of the kinds of students in gainful employment classes, their motivations in taking the courses, and outcomes of their classwork
- Study to establish how much is being accomplished by gainful employment classes for students with special needs
- Study of the educational backgrounds of members of the Young Homemakers Association
- Study to correlate enrollment data available for the first time in vocational homemaking education to gain new clues to program development
- Summary of data supplied by staff reports on methods of program interpretation

• • • Projected Program Activities

Also in the forthcoming year, the staff of the Bureau of Homemaking Education expects to undertake concerted action to accomplish the following activities:

- Continued inservice education of teachers and administrators regarding gainful employment education related to home economics
- Test of proposed revised reimbursement system for homemaking education in three pilot schools
- Renewed efforts to help home economics and administrative personnel strengthen home economics in the junior college
- Orientation of teacher educators to the philosophy and operation of programs of gainful employment education as it relates to home economics

- Preparation for summer session workshops for home economics teachers
- Participation in the series of state leadership training meetings for local directors of vocational education
- Participation in the revision of the interim State Plan for Vocational Education
- Continuation of routines connected with program approvals and youth organizations

INDUSTRIAL EDUCATION

ERNEST G. KRAMER
STATE SUPERVISOR

CHANGE AND ITS IMPACT

The industries of California, unmatched by those of any other western state, are vital to the well-being of the nation. New technology is rapidly expanding the state's basic industries. New developments in construction, housing, aerospace equipment, and product manufacture are just a few of the factors which reflect the tremendous growth and widespread change in the industry of this state. These changes in industry affect our national security, establish patterns of living which all Americans may eventually adopt, and at the same time pose some of the most challenging economic questions that man has had to face.

The most important legislation in industrial education has been the Manpower Development and Training Act (MDTA) and the Vocational Education Act of 1963 (VEA). In addition to the impact of the federal acts and the funds these acts have provided in California, the citizens of the state have also begun to redefine the status of industrial education in an attempt to find answers to questions posed by changing industry and new economic situations.

THE CONTEXT OF INDUSTRIAL EDUCATION

The total program of industrial education in California is being re-evaluated by the Bureau of Industrial Education. This formal process of re-evaluation began in April, 1964, following the recommendation of the 26th Conference on Industrial Education. It began with the formation of an *ad hoc* committee which was given the responsibility of developing a position paper that would include established definitions and goals for a program of industrial education in California. Members of the committee included administrators of industrial education and personnel of the Bureau of Industrial Education. They met with selected persons in a series of six regional meetings for discussions and recommendations. In all areas of industrial education, they found the need for clear definitions and for clear distinctions between the two general areas of industrial education.

• • • Goals

The committee's observations to date are reflected by a general statement that is basic to life in an industrial society:

> Industrial education is an application of the basic concept that the individual, if he is to function effectively in a democratic society, needs to be able to think, act, and contribute, and to make decisions about the future of the culture. Its principal concern has

The subcommittee of the State Joint Apprenticeship Committee advises the State Department of Education on matters relating to instructional materials for the apprenticeship program. Standing, left to right are George Rosecrans, Ernest Kramer, Armand Henderson, and Gordon Littman; seated are Al Brown, Leo Gable, and Charles Stanford.

been to acquaint all members of the industrial society in which we live with the salient features of that society, to enable them to participate effectively in it as consumers, to prepare them for industrial employment, and to safeguard such employment by the development of specific skills and knowledges of a given occupation.

Within this frame of reference, industrial education has traditionally been comprised of two major areas: industrial arts education and trade and technical education. Both areas deal with the materials, processes, skills, and knowledges of industry. Philosophically, however, the two areas differ in principal purpose and, to some extent, in method; and they deal with distinctly different groups of students or with the same students at different stages of learning.

Industrial arts education is the phase of industrial education that deals primarily with developing certain habits, attitudes, and abilities desirable for all citizens of an industrial society regardless of their vocations. Though industrial arts education has basic vocational value for those who will become industrial workers, it has been developed in the schools as a phase of general education. Trade and technical education, on the other hand, has its historical roots in apprenticeship, and its principal goal is to prepare the student for gainful employment in recognized industrial occupations. Like industrial arts education, trade and technical education obtains its instructional substance from industry, but the objective is to acquire the skills and abilities necessary to be successfully employed in an industrial occupation.

CALIFORNIA'S INDUSTRIAL WORK FORCE

California's industrial work force of 1.7 million ranks second among the states of the nation in numbers and constitutes approximately 10 percent of the state's population (18,482,000). This compares with an estimated 71 million employed persons in the United States, 21 million of whom are employed in industry.

In California the industrial work force is not as widely distributed as the agricultural or business work force, but it has far greater economic significance in the metropolitan centers where industry is the major source of employment.

CALIFORNIA'S INDUSTRY AND THE NATION

Automation and technological change are exerting great influence upon industry in California. Well-known are the attempts of the state government to utilize automation itself to solve some of its problems. An example of this was the Governor's call for proposals from aerospace industries in an attempt to provide solutions to employment, water distribution, education, and other state problems. The influence of such industries upon the total planning and development of state growth is likely to increase, opening up to industry challenging areas which have never before been explored. That all industrial progress ultimately derives from the education and efforts of its workers and managers is obvious.

STATEWIDE SERVICES

• • • Workshops and Inservice Programs

Workshops conducted during the year dealt with curriculum development, apprentice instruction, and vocational supervision. The apprenticeship area, treated elsewhere in this report, was one of the year's areas of greatest progress. The following are examples of programs conducted for instructors and supervisors: A technical education workshop, held at UCLA from June 20 to August 21, 1964, was open to all California junior college machine shop instructors. The purpose of this workshop was to familiarize instructors with operational aspects of numerical control of machine tools, to develop course outlines, and to prepare instructor's guides. During the industrial employment phase, participants held jobs in industry and attended information and training sessions at UCLA on alternate weekends. The instructors spent the final week of the workshop in residence at UCLA developing course outlines and an instructional manual. Recommendations of the group to make machine shop programs in junior colleges more effective include the following: (1) updating machine shop instructors' knowledge of numerical controls; and (2) developing instructional materials that will reflect current standards and requirements.

A brief forestry teachers workshop was held at Humboldt State College in October, 1964. The one-day session, attended by 18 teachers of forestry, was devoted to discussions of curriculum improvement in forestry.

A dental assistant workshop held at the University of California Conference Center at Lake Arrowhead was attended by 31 teachers, and one held at Foothill College was attended by 75 teachers. The subjects discussed were current dental techniques, materials, and equipment. Innovations in teaching included slides, overlays, charts, and programmed instructional texts keyed to the technical subject matter.

• • • Consultant Services, Advisory Groups, Conferences

The Industrial Arts Exposition. In March and April, 1965, the 5th Annual Industrial Arts Exposition and Award Program was held, in cooperation with the California State Department of Education, at the Sacramento State Fairgrounds. This exposition, which featured 850 articles selected through regional competition, culminated a year's work in industrial arts in California. In addition to cash prizes, a two-day expense-paid trip to the exposition was provided for 19 outstanding award-winning students and their teachers.

The 27th Annual Conference of Industrial Education. No single activity in the state highlighted the changing nature of industrial education as much as the 27th annual conference, held at Monterey on March 9-11, 1965. An estimated 250 educators and industry representatives attended. The keynote address by Kimball Wiles, Dean of the College of Education, University of Florida, dealt with "Education's Leading Edge," signifying that education is receiving unprecedented emphasis throughout the nation. He cited the knowledge explosion, automation, and new developments in teaching. The challenge to educators, he noted, is whether or not their profession has been important enough in determining methods and means in comparison with outside influences.

Wesley P. Smith, Director of Vocational Education in California, discussed the Vocational Education Act of 1963 and its role as a transitional point in vocational education. He noted that the act has had much impact in California: the California Plan for Vocational Education is being redrawn; the organization for vocational education is in transition at the state, county, and local levels; new directions and new standards are being adopted; and new procedures for financial support are being developed.

J. Graham Sullivan, Associate Superintendent and Chief of the Division of Instruction, in his speech entitled "Looking Ahead -- Curriculum Development and the Instruction Process," predicted the following:

- A highly structured and flexible program of curriculum development supported by research, experimentation, testing, and the dissemination of findings
- A changing role of the teacher and teacher-educational institutions, less teacher responsibility for giving information alone, and more for development of learning skills
- An expansion of team teaching, greater use of new techniques and methodology, and greater flexibility for more adequately meeting student needs.
- A "pipeline system" reaching from the research center directly to the classrooms "with no shut-off valve."
- A new role for the State Department of Education, involving more participation in research and development and less participation in regulating control and housekeeping

The revolution in education, Mr. Sullivan noted, will not be accomplished unless we are willing to try bold new practices.

"Articulation -- High School, Junior College, and Adult Education" was the topic of a speech by Robert E. Swenson. According to Mr. Swenson, the problems of articulation are multiplied because of the separation of the junior college district from the high school district; by control of the curriculum through outside forces, such as college prerequisites; by the great expansion of knowledge requiring frequent curriculum adjustments; and by the great variation in high school programs. Good articulation is necessary to provide better educational services to the student.

In a panel discussion on program evaluation, the following points were made:

- Projects operating under P.L. 88-210 require more objective evaluation. Areas for such evaluation include the need for a specific program; effectiveness of instructional method; relationship of laboratory to lecture; nature of facilities, equipment, and supplies; and final product of the program.

- Community participation in evaluation is important.
- Immediate placement is a primary evaluation of short programs.
- Articulation is necessary for high school, junior college, and adult education.

Other topics of the conference included the relationships of public education and other government-sponsored programs such as MDTA, Youth Opportunity Board, and Economic Opportunity Act.

• • • Instructional Materials

Material related to curriculum development, apprenticeship training, and industrial arts courses were emphasized in publications of the past year. A list of selected publications that are of importance to industrial education appears in the appendix of this report. Publications of particular importance are the following:

Improving Instruction in Dental Assisting. This report of the dental assisting workshop held at Lake Arrowhead contains a description of the duties of a dental assistant, an outline of the demand for dental service, and the organization and activities of the workshop. In addition, the report discusses new developments in dental techniques, materials, equipment, and new techniques of teaching.

Numerical Control of Machine Tools. This is a report of the technical education workshop for the improvement of machine shop instruction held at the University of California at Los Angeles. This publication gives the background of the workshop, defines numerical control, describes workshop activities, lists cooperative companies, presents the two course outlines completed in the workshop, and makes recommendations for instruction in numerical control. The appendix of the report contains photographs of participants with brief resumes of their education and experience.

Innovations in Trade and Technical Teacher Education. This is a report of the 1964 summer session at UCLA, held June 22 to July 30. The report describes the characteristics of trade and technical teachers and also the organization of trade and technical teacher educational programs in California. The current program of trade and technical teacher education is discussed, and various activities relating to the program are illustrated with photographs and flow charts.

Apprenticeship training program publications are developed by the Bureau of Industrial Education through the State Joint Apprenticeship Committee, which represents industry and which suggests new material needed for instruction. The committee and members of the Bureau of Industrial Education then prepare the contents of apprenticeship publications in rough draft form for the Bureau of Publications of the State Department of Education. During the past year, the following Apprenticeship Instructional Materials were included in materials made available to the public schools: (1) Electric Wiring, Part III; (2) Roofing, Part I; (3) Dry Wall Construction, Part II; and (4) Operating Engineers, Heavy Duty Equipment, Part I.

A number of industry groups interested in apprenticeship have negotiated funds for apprenticeship training purposes. In most instances these industry groups have employed persons who are usually designated industry coordinators and who usually devote full-time to training and problems associated with training. Approximately 80 of these coordinators are employed in California at the present time, and their number is increasing. While the services they perform vary from one occupation to another, they, in general, supplement the efforts of the schools and of the apprenticeship agencies rather than duplicating or supplementing services already available. Through their efforts, the apprenticeship program has benefited materially.

Industry apprenticeship training funds have also been used to provide facilities, equipment, and supplies where these would not be available otherwise; to meet the actual expenses of individuals attending teacher workshops; and to reimburse individuals for wages lost through participation in teacher workshops. These additional funds have improved the instructional program appreciably, and an expanded program should result as the improved quality of apprentices completing the apprenticeship program becomes apparent.

Approximately 8,000 copies of the publication Industrial Arts Course Outlines: Grades Seven, Eight, and Nine were distributed to superintendents, principals, supervisors, industrial arts teachers in California public schools, and to teacher educators in accredited industrial arts departments in California colleges. This publication was based upon Suggested Courses of Instruction in Industrial Arts for the Junior High School, which was published in 1953. Its terminology and contents have been updated, and the book includes the new industrial arts area of power mechanics.

Cooperative Activities. One of the cooperative activities that the Bureau of Industrial Education conducts in coordination with other agencies is retraining of persons to make them employable. The problems of unemployment and retraining are compounded by the influx into California of newcomers, many of whom have marginal skills or skills not currently in demand. Startling technological changes in industry demand new training not now in existence. The 1964 report on these cooperative retraining activities, Retraining in California, is a cooperative attempt by the California State Department of Employment and California State Department of Education to describe the programs in operation under the Manpower Development and Training Act and the Area Redevelopment Act.

A YEAR OF PROGRESS

The industrial education instructional programs and related activities cover a wide range of occupations. The ways in which these programs have developed during the past year are reported for the following areas: trade and technical education, peace officers' training, fire training, apprenticeship training, and health services education.

• • • Trade and Technical Education

The Trade-Technical Teacher Education program at UCLA is a good example of an instructional program that has been greatly improved during the last year. Through the efforts of college presidents, deans of instruction, and state supervisors of teacher education, a teacher education program has been developed. This program utilizes team teaching, programmed instruction, traditional total-group instruction, and small-group interaction instruction methods.

The summer session program covers a two-year period. The first session is concerned primarily with providing the necessary knowledge and skills for classroom teaching, and the second session provides a comprehensive study of the history and philosophy of vocational education, with direct application to the development of vocational teacher-community relationships and to instructional effectiveness.

The subject matter of these two vocational education courses is articulated so that each instructional unit is presented in its direct relationship to other units. This method permits the concurrent learning of theory and its application. In addition to the regular teacher-education classes, the Bureau of Industrial Education must provide courses for isolated teachers. These are teachers who live more than 50 miles from an organized class. The number of isolated teachers has grown from about a dozen a few years ago to 75 last year. Most of their instruction is carried on by correspondence because of the difficulty of providing supervised classroom teaching. An innovation that has greatly improved instruction for the isolated teacher is a provision for the new teacher to evaluate classes taught by other teachers and to teach several units in other teachers' classrooms under the supervision of a master teacher. The new teacher applies correspondence lessons to an actual classroom situation with the benefit of a master teacher's experience and evaluation.

• • • Peace Officers' Training

The peace officers' training staff is charged with the responsibility of raising and maintaining the level of competence of California law enforcement officers through implementing and supervising training programs in the state junior college system and the 449 separate law enforcement agencies. Consultant services are provided by the staff to assist local school authorities, law enforcement officials, and others concerned with the planning, promotion, development, and improvement of police training programs.

California has for many years led the nation in the training of peace officers, and the peace officers' training program in California is being used as a model for the rest of the country. Last year 56 junior colleges and 5 state colleges and universities offered programs in police science. Junior college enrollment in police science courses totaled 13,816 students last year, the second highest enrollment in trade and technical courses, exceeded only by electronics. Two basic police science courses of six weeks each are conducted twice a year at Oroville and Hollister. This training program functions as a central recruit training school for officers with less than three years of experience. It is sponsored by the State Bureau of Industrial Education in conjunction with a group of cooperating agencies and regional advisory committees. The objectives of the basic training program are the following:

- To teach new officers the fundamentals of law enforcement work and an understanding of equipment used
- To establish an esprit de corps among officers
- To develop competency as early as possible in the most important police functions
- To eliminate hazards to the officers and others
- To increase efficiency
- To develop uniformity in law enforcement practices and procedures

These firemen received special training in controlling oil fires at recent sessions held in Turlock as part of the California State Fire Training Program.

- To develop cooperation among law enforcement agencies

Last year a total of 110 students completed the teacher training that is offered to police officers who will teach classes in junior colleges and in departmental programs.

• • • Fire Training

The fire training program of the Bureau of Industrial Education provides training in many courses of varying length for the members of rural, municipal, industrial, and military base fire departments and for the California Division of Forestry and the United States Forest Service. Also, instruction is offered through extension classes in the school districts by itinerant instructors. The fire training staff cooperates with the State Fire Marshal and local school districts in organizing fire-prevention classes. This staff also conducts fire-prevention seminars, fire training officers' workshops, arson and fire investigation seminars, and oil fire control classes.

Fire training courses are conducted upon invitation of the fire departments through two types of programs: departmental schools and zone schools. Departmental schools are confined to those departments unable to obtain a local instructor qualified to teach the subject desired and to those departments that request assistance in teaching specialized subjects. During the past year, 72 such courses were conducted, with 1,479 participants enrolled.

Whenever possible, zone schools are planned so as to give the maximum amount of instruction to selected men who are able to teach other members after receiving training and returning to their own departments. Last year 104 zone schools were held, with a total enrollment of 3,433 students.

The trend continues toward providing in the junior colleges more preparatory and extension courses for firemen. Only four junior colleges offered fire training programs in 1962-63; nine offered fire training programs in 1963-64; and 30 junior colleges are currently offering fire science programs.

The California Junior College Association and the Fire Chief's Association, through the state fire training program and the uniform fire science curriculum, has greatly strengthened the junior college fire science programs. Revised in 1965 to reflect the constantly growing and expanding needs of the fire service, the curriculum fire training staff last year planned or assisted in planning and conducting the following activities:

- The Fourth Annual Fire Prevention Seminar was held on the campus of the University of California at Los Angeles from July 13 through 17, 1964, through the cooperation of the Fire Prevention Section of the California Fire Chief's Association and the University Extension Division. The five-day seminar was attended by 130 fire department personnel responsible for fire prevention. Experts in fire prevention presented topics dealing with a wide variety of hazards, and specific problems were discussed in small groups.

- The Governor's Regional Fire Services Safety Conference was held at Mather Field on December 1, 1964. More than 300 fire department personnel representing fire departments in Northern California attended the conference -- one of several emphasizing safety in many industrial fields.

- The Twelfth Annual Fire Training Officer's Workshop was held at Fresno County Fairgrounds from May 10 through 14, 1965, through the cooperation of the Fresno Fire Department, the Mid-Valley Fire Protection District, the North Central Fire Protection District, and the Training Officer's Section of the California Fire Chiefs' Association. Participants in the workshop included 286 training officers, representing fire departments and other government agencies. Each year the participants of this workshop attend one of five successive groups: instructor training, organization for instruction, conference leading, tests and measurements, and personnel development. The latter group was formed this year especially to develop instructional materials which follow the outline in the uniform fire science curriculum.

- The Twelfth Annual Arson and Fire Investigation Seminar was held on the campus of the University of California at Los Angeles from June 14 through 18, 1965. The seminar was attended by 206 members of fire departments, who heard experts present topics on: (1) Fire Scene Investigation; (2) Crime Scene Evidence; (3) Trail of an Arson Case; (4) Arson Rings; and (5) Fraudulent Insurance Claims.

- The Educational Day Program for the California Rural Fire Association was held in Bakersfield on April 24, 1965. This annual all-day program was held for the benefit of the public and representatives of fire departments. Approximately 3,500 people watched demonstrations and took part in the program, which was largely devoted to current methods and techniques of handling exotic fuels.

• • • Apprenticeship Training

The size of the apprenticeship training program changed little during 1965. A report of class enrollments for May, 1965, showed an enrollment of 19,999, compared with 20,223 for May, 1964, a decrease of approximately 2 percent. The number of apprentice classes held in May, 1965, was 1,064, and the number held in May, 1964, was 1,014, an increase of almost 5 percent. Also, the percent of attendance of apprentices enrolled in classes increased from 82.33 percent in 1964 to 85.01 percent in 1965. The average class size for 1965 was 18.08 students, as compared with the class average of 20.0 students for 1964.

During 1965 an effort was made to provide related and supplemental instruction for all apprentices in carpentry. This was accomplished by giving special reimbursement to school districts operating small carpentry apprenticeship classes and by offering correspondence instruction when establishing a class was not feasible. Approximately 50 carpentry apprentices received correspondence instruction. This was an experimental pilot effort, and plans are now being made to extend this type of supplemental instruction to all apprentices.

The teachers of apprenticeship classes are required to participate in a 60-hour teacher training program. This program has been revised as teaching procedures and techniques have been improved or changed to meet changing situations. The teacher training program is carried on primarily by industrial coordinators and supervisors of local programs. However, when instructing in teacher training, they are employed by the Bureau of Industrial Education on a part-time basis and are supervised by Bureau staff.

Teacher Workshops. Through the cooperative efforts of the joint apprenticeship committees and the Bureau of Industrial Education, three workshops were held for teachers of apprenticeship-related courses. Seventy-seven instructors of apprentice carpenters in Southern California attended a workshop designed to provide the instructors with an opportunity to: (1) make color slides, overlays, and charts under supervision of the teacher training staff of UCLA; (2) present a review of current teaching methods and techniques; and (3) provide an opportunity for instructors to meet and exchange ideas.

Sixty-nine teachers of apprentice electricians met at San Jose City College in April, 1965, to study ways of increasing the effectiveness of their teaching techniques. Presentations on the use of visual aids, preparation of lesson plans, construction of tests, and discussions on various problems of teaching occupied the four days of the workshop.

A one-day workshop for teachers of operating engineers apprenticeship classes was held in Oakland with 30 people attending. A new workbook for use by operating engineer apprentices is being developed, and the material written so far was reviewed and recommendations were made.

HEALTH SERVICES EDUCATION

California junior colleges have recognized another opportunity to serve the community through the development of programs that are designed to prepare technical assistants for the health occupations. The colleges extend the campus to the hospital and to other community agencies where supervised clinical practice helps the student prepare for his role as practitioner.

The increased need for personnel in the health fields is based on the rapid expansion of health services. Professionals need supporting personnel, for whom public education must provide a large share of the training. A committee of the American Medical Association has already identified over fifty occupational areas allied to medicine. Students are currently receiving training in eleven of these areas in the junior colleges of California. The curricula for health courses are designed to develop personal and technical competence in a variety of health occupations. The Associate in Arts degree is granted when the courses required in a major field of interest, combined with general education courses, meet the college's graduation requirements. Most of the programs are completed in two years, although in a few programs a certificate of proficiency may be issued at the end of twelve months.

In California, technical education curricula in the health occupations have been developed in the following fields:

• • • Nursing

A registered nurse furnishes nursing services to patients and also supervises allied nursing personnel in hospitals and other agencies. The curriculum for education in nursing combines general education with a more comprehensive approach to nursing theory and practice.

A licensed vocational nurse gives direct care to patients under the supervision of a registered nurse or physician. The curriculum for licensed vocational nurse includes the basic fundamentals of nursing theory and practice, and it is designed to prepare the vocational nurse to function as a member of a nursing team. This program is distinctly separate from the program for registered nurses.

• • • Dental Hygiene

A dental hygienist works under the supervision of a licensed dentist in promoting dental health education and the preventive aspects of dental care. Theory and practice are correlated in the curriculum so as to develop the necessary skills required by the practitioner. This program must be affiliated with a school of dentistry.

• • • Dental Assisting

The work of a dental assistant is divided between managing the office and assisting the dentist in treatment duties. The curriculum for courses in dental assisting combines theoretical instruction with on-the-job training in local dental offices.

• • • Dental Technology

The dental technician is responsible for the fabrication of all types of dental appliances. The curriculum for classes in dental technology combines theoretical instruction with on-the-job training in a commercial dental laboratory.

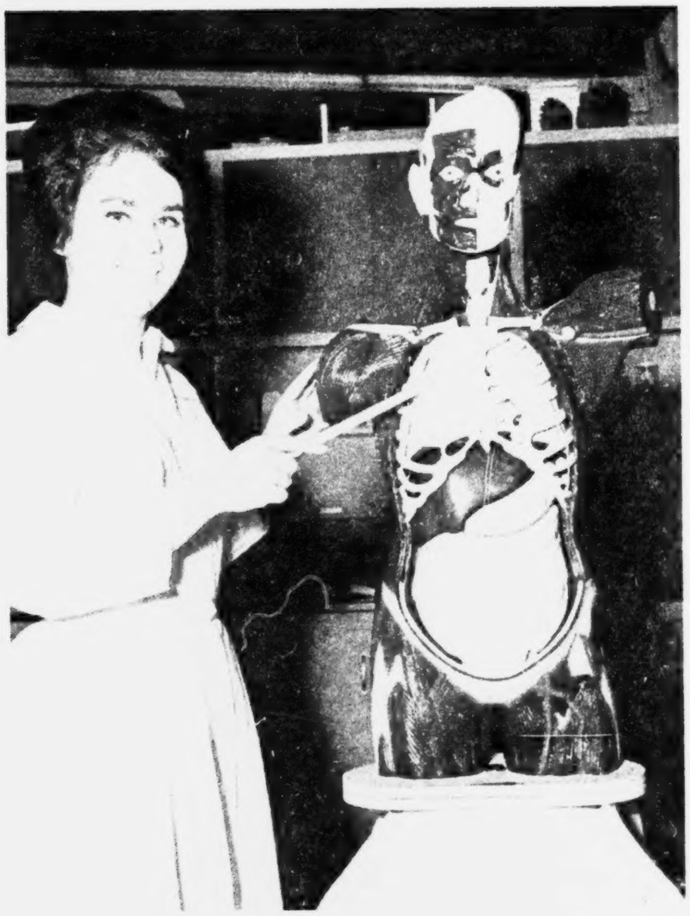
• • • X-ray Technology

The x-ray technician operates x-ray equipment and assists the physician in the diagnostic and therapeutic use of x-ray techniques. Some instructional programs combine clinical experience with theoretical instruction, and this is followed by a 12-month internship in an approved hospital. Other programs offer at the college level only pre-x-ray courses, which are followed by two years of hospital training.

• • • Medical Assisting

The work of the medical assistant is divided between managing the office and providing technical assistance to the doctor. Some schools offer a separate program for the medical assistant and the medical secretary. Other schools offer a curriculum which is designed to develop competencies in both areas.

Students of John Francis Polytechnic High School participate in an experimental on-the-job nursing training program as part of the regular school curriculum.



Anatomy and physiology are more easily understood with the aid of anatomical models used by students in the Medical Assisting Course at Chabot College.

• • • Medical Record Librarianship

The medical record librarian is responsible for the coordination of medical data based on detailed records of patients' illnesses and treatments. The curriculum includes two years of general college work and one year of study in medical record science. Practical experience is provided by on-the-job training in hospitals.

• • • Opthalmic Optics

The optician must be able to interpret optical prescriptions, make eyeglass adjustments, and understand optical correction. The curriculum for optician stresses the fundamentals and practical skills of optics. The existing programs have no provision for clinical experience, although some practical experience is gained in college laboratories.

• • • Dietetics

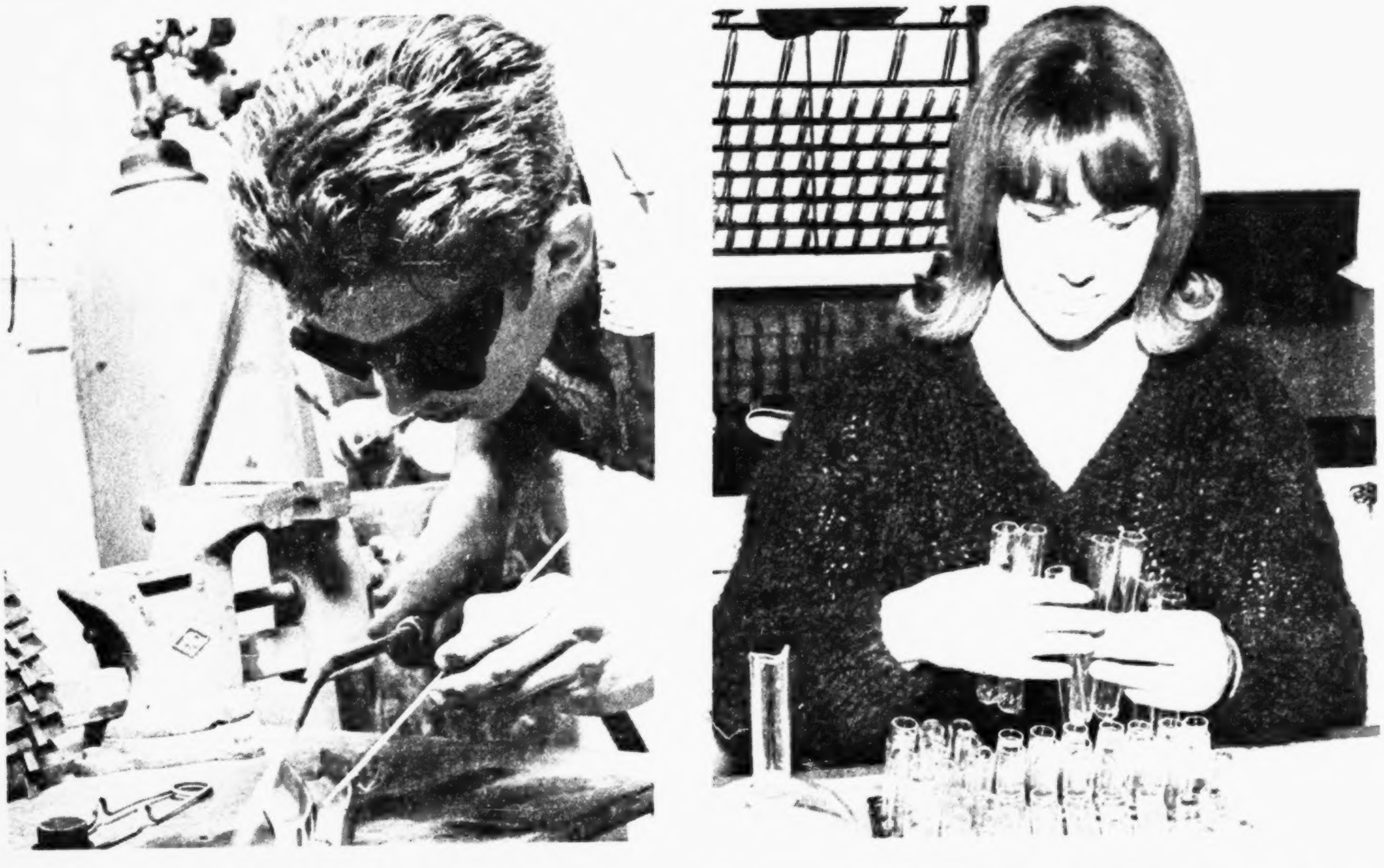
The dietitian aide assists the hospital dietitians or acts as a food service supervisor in small institutions. Clinical practice may be arranged with a variety of institutions.

• • • Sanitation Technology

The sanitation technician carries out the technical work involved in maintaining living conditions in a town or city. Two areas of training included in established programs are sewage disposal and water treatment.

Many additional programs will be needed as health services increase and existing programs expand. The Social Security - Medicare Bill is one example of federal legislation that will affect the forecasting of future health needs in all communities. Communication and cooperation are the key words in the planning of each new health program. The professional, the technician, and the educator must become partners in developing a program that will produce a skilled and competent practitioner.

The Department of Education recently established the position of Consultant in Health Occupations to assist junior college districts to identify their role in the development of health occupation curricula. In addition, the concept of a technical center for health careers presents a creative opportunity to the junior college. Such an innovation promotes the efficient use of faculty through the implementation of a core curriculum. There is improved coordination of clinical areas as programs expand and also a better opportunity to evaluate curriculum in light of the changing trends in clinical practice. The imagination



Participation in work-study programs is augmented by on-the-job training as part of a student's vocational education at San Diego High School.

of the college in expanding its horizons may eventually be reflected in adequate health services for all communities.

OCCUPATIONAL COMPETENCY EXAMINATION

All applicants for a designated subjects credential in California must take and pass an appropriate competency examination. This examination has two parts: written and manipulative. During the past year 457 applicants took the written examination, and 64 percent of them passed; 141 applicants took the manipulative examination and 91 percent passed. The occupational area in which most of the examinations were given was electronics; and auto mechanics, machine shop, and carpentry followed in that order.

RESEARCH AND STUDIES

To develop more effective industrial education, a definite need exists for additional research in the following areas:

- Articulation in industrial education curricula of high schools, junior colleges, and adult schools
- Follow-up study for industrial education students
- Statewide study to review the total program of industrial arts education

The study of the aviation mechanic's occupation is a good example of the development of valuable information on vocational education through research.

• • • A Study of the Aviation Mechanic's Occupation

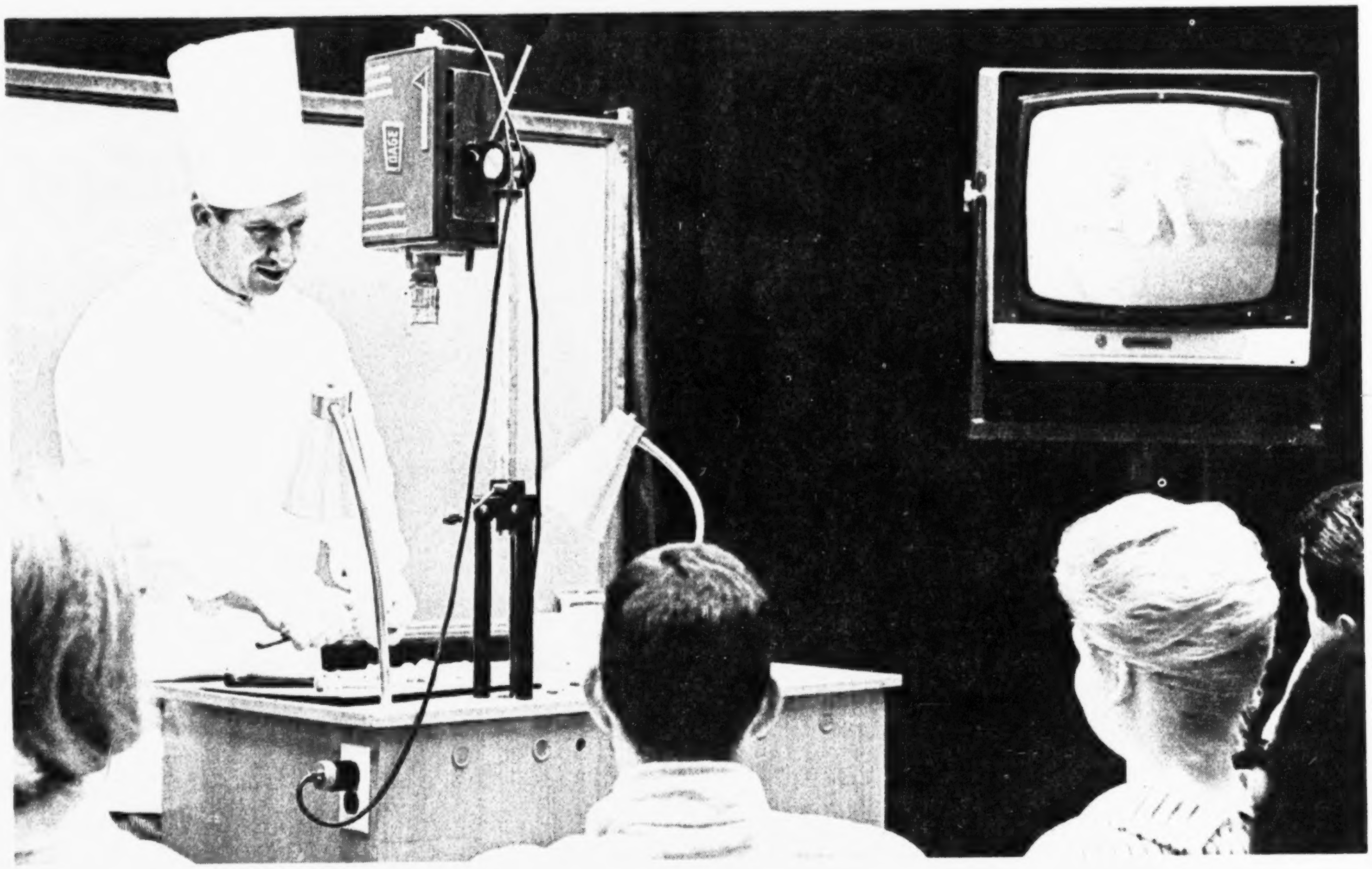
The Aviation Mechanic's Occupation Study was begun in the spring of 1964, and all data were collected and tabulated by the spring of 1965. The purpose of this study was to identify the levels of educational attainment required for performance of the various tasks of the aviation mechanic. This information could then be used in developing examinations that could indicate how well the educational objective for each test was being met.

The study was based upon a total of 8,053 aviation mechanics employed by airlines, large aviation companies, and small aviation companies. Data collected by questionnaire for each of the information topics were key punched into IBM cards, with a maximum of 507 cards per questionnaire. The five questions studied were the following:

1. How many mechanics performed each task?
2. How often do they perform each task?
3. What technical knowledge is required?
4. What manipulative skill is required?
5. How much training does industry do for each of these tasks?

The study was designed so that the results could be introduced directly into the school curricula for aviation mechanics.

Because of the California study, the Federal Aviation Agency, Airline Transport Association, and the Aviation Technicians Education Council endorsed and encouraged the conducting of a national survey, the findings of which would be compared with the California findings and then used to supplement the California findings. This project will no doubt lead to the development of experimental programs for determining and evaluating better methods of teaching the subject contents identified by the survey.



Closed circuit television is a valuable instructional aid in teaching the hotel and restaurant trade at the City College of San Francisco.

ADJUSTMENTS TO CHANGE

No single program developed to cope with technological changes can be as effective as a well planned, clearly stated philosophy for industrial education in California. A statement of philosophy appropriate for the mid-sixties must recognize the close affinity between industrial education and the economic and social life of the nation. Such a statement must further recognize that, as our social and economic life undergoes significant changes, our basic theory of industrial education must shift its emphases.

Within this framework, there are four fundamental considerations to guide the activities of industrial education:

- First, industrial education should be an integrated program with two distinct purposes -- general education and the preparation of students for gainful employment in industrial occupations.

- Second, the role of industrial education is that of the principal program in American education to emphasize the position and potential of industry in our society -- a role both industrialists and educators should clearly recognize.
- Third, the major objectives of industrial education, those of general education and occupational preparation, should be paramount in the minds of those establishing industrial curriculums.
- Fourth, there is evident need for constant vigor in keeping philosophy, organization, subject matter, facilities, and teacher selection and preparation in accord with the contemporary industrial tempo.

CHARACTERISTICS AND OBJECTIVES OF INDUSTRIAL EDUCATION

• • • Characteristics

- Industrial education is an integral part of the total program of education that has as its major purposes the preparation of youth and adults for participation in (1) our industrial society; and (2) occupations and professions that include the traditional trades, services, and technical classifications in industry.
- Industrial education derives its content from the tools, instruments, machines, materials, processes, power, occupations, and know-how that makes industry function.
- Industrial education requires shops or laboratories that are unique educational facilities designed to provide a place for students to have realistic industrial experiences consistent with the objectives.
- Industrial education provides an environment for the development of an appreciation for the dignity of work and the value of craftsmanship.
- Industrial education requires special teacher selection and preparation.
- Industrial education makes extensive use of advisory committees involving labor, management, business, industry, and government.
- Industrial education needs special emphasis on recruitment, selection, placement, and followup, especially for students with occupational objectives.
- Industrial education is designed to serve several important functions in the total program of public education -- general education, occupation preparation, and pre-technical.

• • • Objectives

- General Education Objectives of Industrial Education

  1. To develop an understanding and appreciation of the place of industry and technology in American culture
  2. To provide realistic experiences with industrial tools, materials, and processes
  3. To develop basic skills and knowledges in the use of tools and materials used by most Americans in everyday living
  4. To develop good work habits
  5. To provide opportunity for students to explore and identify individual aptitudes, interests, and talents

- Occupational Preparation Objectives of Industrial Education

  1. To develop skills, knowledges, and appreciation for gainful employment in traditional trades as well as in service and technical classifications
  2. To assist employed workers to achieve satisfaction and success in present jobs or to advance to jobs requiring a higher level of skill and knowledge
  3. Retrain workers displaced by technological changes

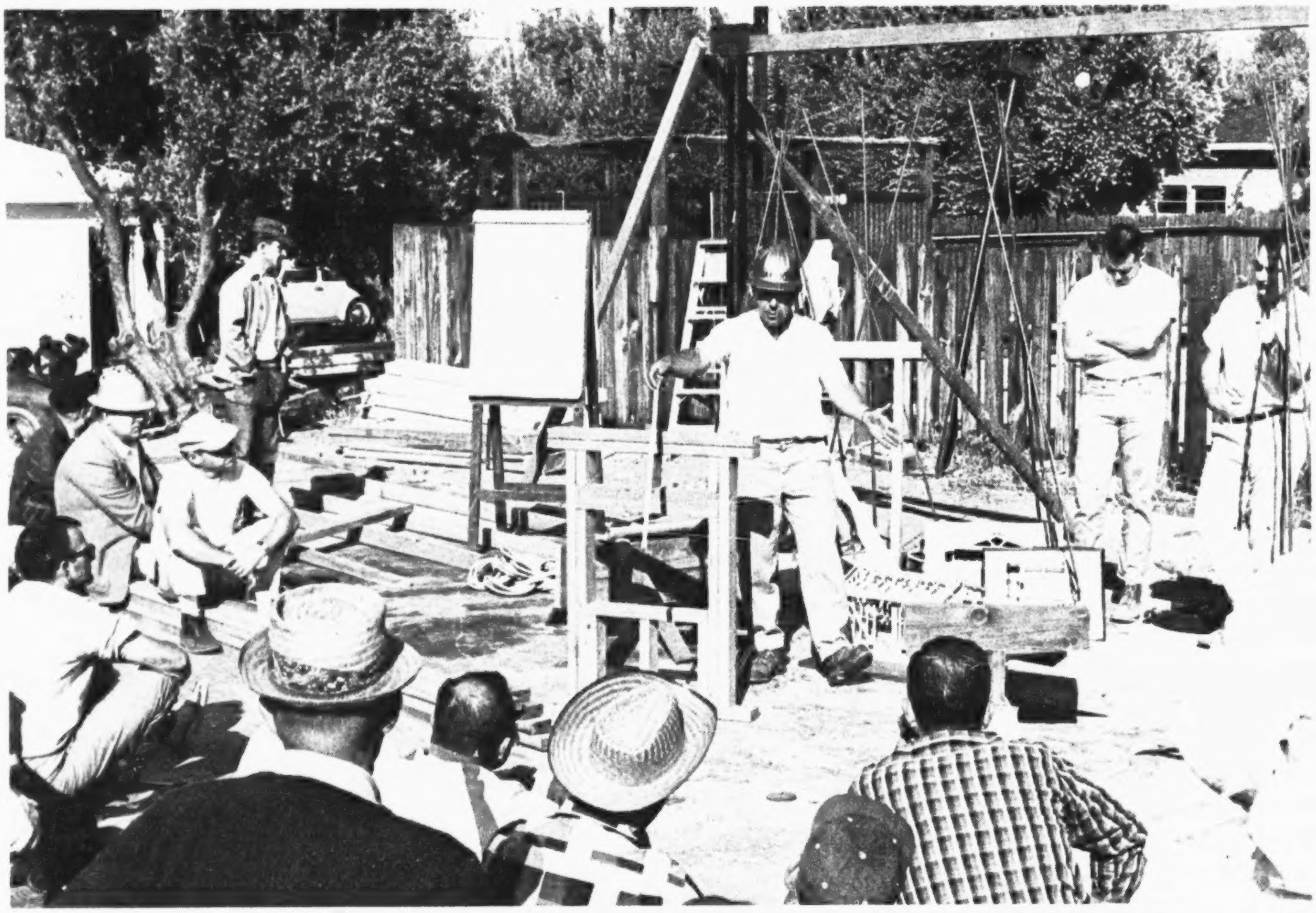
- Pretechnical Objectives of Industrial Education

  1. Develop skills, knowledge, and appreciation needed on a pre-collegiate basis for successful pursuit of careers in engineering, science, and related fields
  2. Enable youth to understand the relationship between academic theory and general educational competence through typical activities of engineers

- Summary of Objectives

  1. Industrial education should be a single integrated program with two principal purposes: (a) general education; and (b) preparation for gainful employment in an industrial occupation.
  2. Industrial education is the principal program in American education that emphasizes the place and potential of industry in our society.
  3. Predominant objectives of industrial education include general education and pre-technical and occupational preparation for industrial employment.

Developments in our economy and in our culture indicate changes in the traditional patterns of industrial education. New programs now being developed may require new patterns, or patterns other than the traditional.



Vocational teachers in woodworking and carpentry learn modern construction practices by attending inservice training workshops in the Los Angeles Unified School District High School Occupational Preparation Program.

CHALLENGE AND CHANGE

A new development in vocational education in California is the area vocational school. The San Juan Unified School District has established area vocational programs in automotive, drafting, electronics, graphic arts, and automation-computers. These programs are made available, on a district-wide basis, to students from all high schools. Students maintain identity with their own high schools but are transported to the area vocational school to attend classes in vocational education.

The San Jose Unified School District has joined with three other adjacent high school districts to construct and operate an area vocational school facility. This facility will provide an opportunity for all high school students in the Santa Clara valley to participate in an organized and established vocational program. When the facility is completed, 24 vocational courses will be offered on subjects ranging from aircraft occupations to welding. The facility will accommodate 1,500 full-time day students and an equal number of part-time evening students.

LEGISLATION

Assembly Resolution No. 138, passed by the last session of the legislature, requires the Department of Education to make a study to determine the role of junior colleges and high schools in a comprehensive vocational and technical education program and to report the results of this study to the legislature at the 1966 regular session.

Senate Bill 930, passed by the last session of the legislature, authorizes a county superintendent, or the governing board of a school district maintaining a high school, to establish and maintain one or more regional occupational centers. Such centers may provide day (including Saturday) and evening full-time and part-time vocational education programs for minors.

NEW INDUSTRIAL EDUCATION CREDENTIAL

The State Board of Education has authorized the issuance of a new credential for the teaching of industrial arts and occupational subjects, grades 9 through 12. In many small schools only one person is needed, or is available, to teach both industrial arts and vocational subjects. This credential provides such authorization.

In brief, the applicant must be qualified to teach industrial arts and trade and technical subjects in the high school. In addition, he must have experience and show competency in an occupational field and must take additional courses in teacher education.

HIGH SCHOOL INDUSTRIAL EDUCATION

Industrial education in the high school must be strengthened and expanded, as indicated by a great amount of evidence. The most convincing argument for this is the fact that the high school usually offers the only opportunity for the dropout to receive any formal training in an occupation that will give him a salable skill in the labor market. The importance of industrial education to the individual student cannot be overemphasized. Specific and salable occupational competency is the surest guarantee that students can have of getting their toes into the economic door. It may be that getting their first jobs, or not getting them, will be the most crucial events in their lives. Certainly their well-being is at stake; certainly their future roles in the democratic way of life are at stake. Worthwhile employment is a necessary ingredient of their effective democratic participation. For them, good citizenship and full employment run hand in hand. It is the determined responsibility of industrial educators to join the two with a dynamic and efficient program of industrial education. We must find more time in the busy high school schedule for the specific training demanded by today's labor market and also for the more general industrial training of the industrial arts program.

VT 001 392

Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. First Quarterly Technical Report.

Morrison, Edward J.
American Institutes for Research, Pittsburgh, Pa.
Pub Date - 30Jun65
MF AVAILABLE IN VT-ERIC SET. 61p.

*CURRICULUM DEVELOPMENT, *JOB ANALYSIS, OCCUPATIONAL INFORMATION, *GUIDANCE PROGRAMS, EDUCATIONAL OBJECTIVES, *VOCATIONAL EDUCATION, EXPERIMENTAL CURRICULUM, PROGRAM DESCRIPTIONS, OCCUPATIONAL CLUSTERS, HIGH SCHOOLS, EMPLOYMENT TRENDS, PROGRAM DEVELOPMENT, Project ABLE, Quincy, Massachusetts,

Technical activity from April 1 through June 30, 1965 was concentrated in behavior analysis and guidance program development. The behavior analysis involved identifying 1,051 jobs as candidates for inclusion in the training program and grouping them into 30 sub-families on the basis of task similarities. Data necessary for decision to include the jobs in training were collected for 288 jobs and task enumeration was completed for 115 jobs. The appendixes contain (1) a description of the general procedures used to select jobs, enumerate the tasks required in each job, and identify other important job requirements, (2) sample forms used in the behavior analysis process, (3) the general plan being followed in developing the guidance program, (4) a description of the present guidance program in the Quincy Public Schools, and (5) a list of the educators and scholars comprising an advisory panel to provide technical review, guidance, and counsel for the project. At its first meeting, this panel gave major consideration to defining instructional objectives. (HC)

VT 001 392

ED022065

VT 01392

FIRST QUARTERLY TECHNICAL REPORT

Project No. 5-0009
Contract No. OE-5-85-019

DEVELOPMENT AND EVALUATION OF AN EXPERIMENTAL CURRICULUM FOR THE NEW QUINCY (MASS.) VOCATIONAL-TECHNICAL SCHOOL

30 June 1965

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

VT001392

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

DEVELOPMENT AND EVALUATION OF AN EXPERIMENTAL CURRICULUM FOR THE NEW QUINCY (MASS.) VOCATIONAL-TECHNICAL SCHOOL

Project No. 5-0009
Contract No. OE-5-85-019

Edward J. Morrison

30 June 1965

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

American Institutes for Research
Pittsburgh, Pennsylvania

TABLE OF CONTENTS

Page

FOREWORD ii
PROJECT OVERVIEW iii
REPORT SUMMARY iv
TECHNICAL SCHEDULE 1
PROJECT ORGANIZATION 3
BEHAVIOR ANALYSIS 3
GUIDANCE PROGRAM 5
WORK OF THE ADVISORY PANEL 6
PLANS FOR NEXT QUARTER 7

APPENDIXES

APPENDIX A. Some Suggestions Concerning First Steps in Vocational Analysis
APPENDIX B. Forms Used for Collecting Job Data
APPENDIX C. Suggested Procedure for Development of Guidance Program
APPENDIX D. Quincy Public Schools Guidance Program: Secondary Schools
APPENDIX E. Advisory Panel Information

FOREWORD

This report, submitted in compliance with Article 3 of the contract, summarizes the technical progress of Project ABLE during its first quarter of operation, 1 April to 30 June 1965. A brief overview of the project is presented first. Then, following in order, are a report summary, a short review of project organization and schedules, discussions of specific technical topics and, finally, plans for next quarter. A number of appendixes supply details relevant to topics covered in the body of the report.

OVERVIEW: Project ABLE

A Joint Research Project of: Public Schools of Quincy, Massachusetts
and American Institutes for Research

Title: DEVELOPMENT AND EVALUATION OF AN EXPERIMENTAL CURRICULUM FOR THE NEW QUINCY (MASS.) VOCATIONAL-TECHNICAL SCHOOL

Objectives: The principal goal of the project is to demonstrate increased effectiveness of instruction whose content is explicitly derived from analysis of desired behavior after graduation, and which, in addition, attempts to apply newly developed educational technology to the design, conduct, and evaluation of vocational education. Included in this new technology are methods of defining educational objectives, deriving topical content for courses, preparation of students in prerequisite knowledges and attitudes, individualizing instruction, measuring student achievement, and establishing a system for evaluating program results in terms of outcomes following graduation.

Procedure: The procedure begins with the collection of vocational information for representative jobs in eleven different vocational areas. Analysis will then be made of the performances required for job execution, resulting in descriptions of essential classes of performance which need to be learned. On the basis of this information, a panel of educational and vocational scholars will develop recommended objectives for a vocational curriculum which incorporates the goals of (1) vocational competence; (2) responsible citizenship; and (3) individual self-fulfillment. A curriculum then will be designed in topic form to provide for comprehensiveness, and also for flexibility of coverage, for each of the vocational areas. Guidance programs and prerequisite instruction to prepare junior high students also will be designed. Selection of instructional materials, methods, and aids, and design of materials, when required, will also be undertaken. An important step will be the development of performance measures tied to the objectives of instruction. Methods of instruction will be devised to make possible individualized student progression and selection of alternative programs, and teacher-training materials will be developed to accomplish inservice teacher education of Quincy School Personnel. A plan will be developed for conducting program evaluation not only in terms of end-of-year examinations, but also in terms of continuing follow-up of outcomes after graduation.

Time Schedule: Begin 1 April 1965

Complete 31 March 1970

Present Contract to 30 June 1966

REPORT SUMMARY

This report summarizes technical progress to 30 June 1965. Activity during this initial period has been concentrated in behavior analysis and guidance program development. Identification, selection, and description of jobs for inclusion in the training program has begun in nine vocational areas and significant progress has been achieved in five of the areas. The present Quincy guidance program has been described and guidance objectives to support the new curriculum are under development. In its first meeting 26 June, the Advisory Panel reviewed the aims, procedures, and expected outcomes of the project and agreed upon procedures for development of instructional objectives. It is expected that during the next quarterly period the behavior analysis will be substantially completed, analysis of requirements in mathematics and social studies will begin, instructional and guidance objectives will be prepared in first form for review by the Advisory Panel.

TECHNICAL SCHEDULE

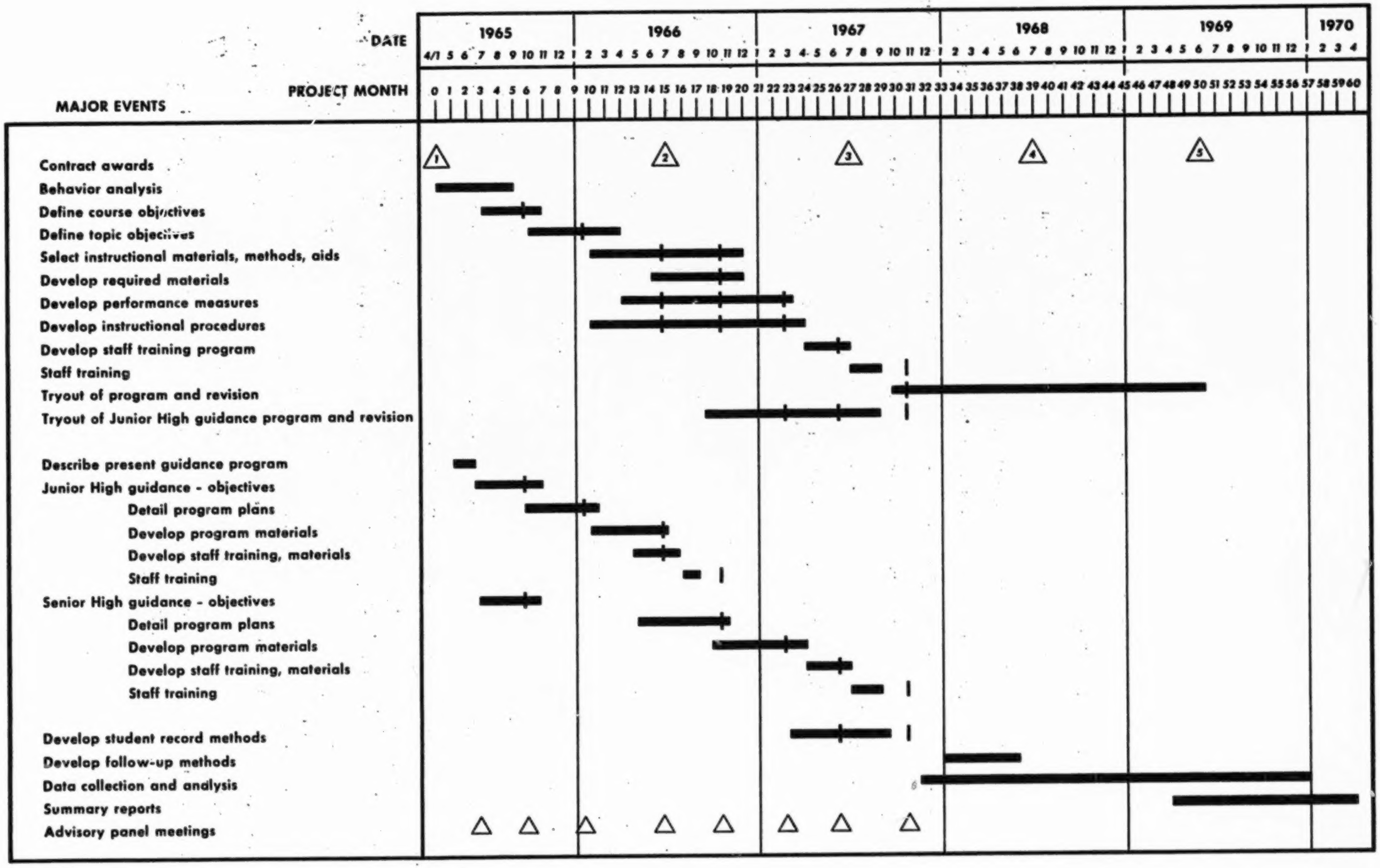
The project schedule is shown on the following page. This schedule lists all of the major technical events planned for the project and, thus, provides a convenient summary of the technical program plan.

During the present reporting period (Project Months 1-3), technical activity has conformed to the schedule which calls for behavior analysis in the curriculum development work, a description of the present guidance program, and the first meeting of the Advisory Panel. This report is devoted to discussion of these three topics primarily.

With completion of the analysis of competent behavior, emphasis in curriculum construction will shift to definition of course and topic objectives and then to development of instructional materials, methods and aids, and to design of performance measures. The next steps in guidance program development are the definition of specific objectives and the development of detailed plans and supporting materials for the Junior High School program. All of these activities will be well under way before the end of the present contract period.

Three observations regarding the project schedule should be made. First the dates assigned to contract awards are estimates based only on the assumption that the Office of Education will consider a 12-month contract period fiscally convenient. Second, the thin vertical lines through horizontal bars indicate points at which it is planned that the Advisory Panel will review the activity indicated. Thus, for example, the second Advisory Panel meeting will be concerned with objectives for courses of study and for both Junior and Senior High guidance programs. Finally, Advisory Panel meetings are shown only through November 1967 simply because it did not seem reasonable to forecast the meeting dates any farther in advance.

MASTER SCHEDULE: PROJECT ABLE



PROJECT ORGANIZATION

Three elements of the organization affect the technical progress of the project. The project staff is responsible for performance of the research tasks. The project staff consists of four research specialists, including the project director, from A.I.R. and up to 16 educators from the Quincy Public Schools. The project director is responsible to a three-man policy committee which consists of the Superintendent of Schools, the Director of Research of A.I.R., and the Assistant Superintendent of Schools in charge of Vocational-Technical Education. Both the policy committee and the project director are provided with technical review and counsel by the Advisory Panel which consists of seven educators and scholars of national stature. All of these groups are staffed and functioning in the program.

BEHAVIOR ANALYSIS

A major requirement of the project plan is that objectives for courses and for topics within courses of study, be stated in specific operational terms and that objectives reflect the behaviors desired of the student when he has completed a particular course. To satisfy this requirement, the tasks performed by competent incumbents of jobs for which training is to be provided must be identified and the learnable skills and knowledges prerequisite to successful performance of those tasks must be defined.

Appendix A describes the general procedures used during the present reporting period to select jobs for inclusion in training, to enumerate the tasks required in each job, and to identify other important job requirements. Appendix B exhibits samples of the three detailed forms completed by coordinators in the process of identifying and selecting jobs and enumerating tasks.

During most of the present reporting period, analysis was done primarily in four vocational areas: electro-electronics, general piping, graphic and commercial arts, and metals and machines. During June, analysis began in five additional areas: power mechanics, computer data processing, business education, general woodworking, and home economics. A summary is presented below for the five vocational areas in which significant progress had been recorded by 15 June. This summary shows for each area the number of jobs identified as candidates for training development, the number of sub-families into which the candidates have been grouped because of task similarities, the number of jobs for which the data required to decide on inclusion have been gathered, and the number of jobs for which task enumerations are complete.

	IDENTIFICATIONS MADE		JOB DATA COLLECTED	
Vocational Areas:	Jobs	Sub-families	Selection Criteria	Tasks
Electro-electronics	169	2	23	40
General Piping	58	7	57	12
Graphic Arts	368	12	4	4
Metals and Machines	405	3	179	59
Computer Data Processing	51	6	25	--
	1051	30	288	115

Numbers of Jobs for which Identification, Selection, and Description Activities Were Complete as of 15 June 1965

As of about 15 June 1965, 1051 jobs had been identified as candidates for inclusion in the training program. These jobs had been grouped into 30 sub-families on the basis of task similarities. Data necessary to decide on including the job in training had been collected for 288 of the jobs and task enumeration was complete for 115 jobs.

A diagram showing the skill level and task content relationships between jobs is being developed for each vocational area as jobs are identified. This diagram is useful in verifying that a vocational area has been searched thoroughly for job types, in identifying jobs which have common task content, in establishing the relative skill and knowledge levels of jobs in the same progression, and in assuring that the set of jobs selected provides an adequate representation of the skills and knowledges required throughout the vocational area.

Coordinators in the four vocational areas listed first in the table above have started making the first selection of jobs for inclusion in the training development program and have begun the more detailed description of the selected jobs in accordance with the procedures of Appendix A.

GUIDANCE PROGRAM

Students who will be eligible for the first class entering the new vocational-technical curriculum in September 1967 now are entering eighth grade. New guidance programs are needed for these students no later than grade nine if the programs are to be reasonably useful to the students. Consequently, development of guidance programs was started in the first month of the project. A member of the Quincy Public School Guidance Department was assigned to the project half-time for the purpose of coordinating development of the new guidance programs. In addition, it is believed that by working together daily with the vocational coordinators, the guidance man can help assure the integration of instructional and guidance programs which is particularly important when instruction is individualized.

The general plan being followed in development of guidance programs is given in Appendix C. Step 1 in the plan requires a description of guidance as now provided in the Quincy Public Schools. Appendix D is a draft of this description prepared by the Guidance Department. Attention now has turned to development of objectives for the guidance programs.

WORK OF THE ADVISORY PANEL

An advisory panel of seven distinguished educators and scholars has been formed to provide the project with technical review, guidance and counsel. The Advisory Panel met in Quincy for an all-day session on 26 June with key people from the Quincy Public Schools and from A.I.R. Appendix E presents a list of the Advisory Panel members, a list of participants in the 26 June meeting, and the agenda for that meeting.

A topic given major consideration by the Panel was the problem of defining instructional objectives. It was agreed that specific objectives are needed in four main areas and that the procedure for developing objectives in each area would be as follows:

1. Specific vocational objectives: to be obtained from analysis of occupations, to be summarized by the project staff, to be reviewed by Panel.

2. General vocational objectives: inputs to be accepted from the analysis of occupations, as well as from two A.I.R. projects now under way. One project attempts to define generalizable skills, the other to define general principles, attitudes concerning employment, career, etc. Summary of such information to be made by project staff, reviewed by Panel.

3. Citizenship objectives: to be based upon Panel discussion and revision of descriptions originally supplied by project staff. Some inputs probably will be available from another A.I.R. project.

4. Self-fulfillment objectives: to be derived as for citizenship.

The Advisory Panel also discussed the aims, procedures and desired outcomes of the project, commented on particular aspects of the project as planned, and made specific recommendations on curriculum and guidance. Minutes of the meeting are not available at this time because the meeting occurred so near the end of the reporting period. They will be available shortly and will be included with the progress letter for July.

PLANS FOR NEXT QUARTER

The following activities are planned for the quarter ending 30 September 1965:

1. Behavior analysis will continue in all nine vocational areas now active and analysis will begin in at least one additional area.
2. The selection of jobs to be included in the training curriculum and the full description of each of those jobs will be substantially complete in all active vocational areas.
3. Analysis of instructional requirements in mathematics and in social studies will begin.
4. The first selection of instructional objectives will be prepared for review by the Advisory Panel.
5. Proposed objectives for Junior and Senior High School guidance programs will be prepared for review by the Advisory Panel.

APPENDIX A

SOME SUGGESTIONS CONCERNING FIRST STEPS IN VOCATIONAL ANALYSIS

SOME SUGGESTIONS CONCERNING FIRST STEPS IN VOCATIONAL ANALYSIS

As described in the study proposal, our first major goal is a set of topic objectives and course objectives. It is planned that these objectives be derived from statements of the performances actually required by specific jobs and that the jobs shall be representative of the job families selected for emphasis in the Quincy program. The process of arriving at objectives may be indicated by the following list of intermediate steps.

1. Select job families for emphasis.
2. Select a set of representative jobs in each job family.
3. Describe each job.
4. Identify the tasks required in performance of each job.
5. Identify learnable skills and knowledges required for performance of each task and job.
6. Define objectives for training units or topics.
7. Define objectives for course.

Of course, more detail will be developed in the outline of each of these steps as work proceeds.

The first step, "Select Job Families," has been taken. The 11 job families chosen for emphasis in the Quincy program are listed on page 15 of the study proposal. This paper is concerned with steps 2-4, that is, with the selection and description of a set of representative jobs within each job family and with identification of the major tasks each job requires. Completion of the steps discussed in this paper is the preparation necessary for the description and analysis of tasks in terms of the learnable skills and knowledges the tasks require.

Job Selection

Three sources provide the principal data needed to identify the population of jobs within any job family. These are:

- The knowledge of the vocational area expert.
- Occupational Outlook Handbook (1963-64 edition) and sources referenced therein.
- Dictionary of Occupational Titles (latest edition).

Additional sources include the Position Classification Standards of the U. S. Civil Service Commission, the Wage Board Standards for civilian employees of the Air Force, Navy and Army, the local offices of the U. S. Employment Service, the State Employment Service, unions, trade associations, and industrial firms.

For any job family, these sources will provide a number of job titles which is much larger than the number of jobs for which it is possible, desirable, or necessary to develop vocational training within this program. Our purpose is to arrive at a smaller set of jobs which is representative of the job family. That is, the jobs selected should differ from one another in the performance they require and, taken as a group, should include substantially all of the learnable skills and knowledges which are both appropriate for the training programs and demanded by the job family. Final refinements in the selection of jobs will come after analysis of the specific performances, which are required. With this end result in mind, the following criteria and considerations are recommended for the initial selection. Jobs should be selected which:

1. In comparison with related jobs, require performances of a wider variety of tasks and a larger range of skill levels. Thus, the job of machinist might be chosen on this basis rather than the job of lathe operator since the machinist should be able to do the tasks of a lathe operator and some other tasks as well.

2. Require an appropriate amount of vocational training time. That is, jobs requiring only a very short period of training for most students

probably should not be listed. Similarly, jobs which require training time beyond that expected to be available in the Quincy program should not be included.

3. Have entrance, apprenticeship, or on-the-job training requirements which can be met better as a result of vocational training. Thus, jobs for which the training graduate could substantially meet the entrance requirements, or would be allowed to progress more rapidly through apprenticeship and additional training programs, would be favored for selection. Jobs which could be entered only after long service in another job, or only after an extended, fixed period of apprenticeship or additional training, or only by meeting requirements beyond the control of the training agency would be less desirable candidates for selection. This principle is not intended to imply that the content of vocational training should include only that which pays off immediately in a job. It is intended to foster meaningful and lasting vocational rewards for the student who performs successfully in training.

4. Are appropriate with respect to the cost, size, support requirements, and expected usage of training facilities and training equipment. This consideration may limit offerings in the computer data processing field, for example, to jobs not requiring frequent access to a large digital computer. It might permit training for jobs requiring use of less expensive equipment (key punch, sorters, tabulators, etc.). It might be possible to offer training for which facilities can be rented or even borrowed during the owner's off periods.

5. Are predictable with respect to the skills and knowledges which will be required in the next five years. Of course, radical changes may take place unexpectedly in any vocational area. If, however, an occupation is undergoing changes due, for example, to mechanization, introduction of new procedures, or revision of job structures, then effective training for that occupation may be changed radically. In such a case, training plans can be prepared when the performances, skills, and knowledges can be identified, but not before.

6. Have favorable employment expectations in the time period for which training is being prepared. Sources for data needed to evaluate future employment opportunities include:

- Occupational Outlook Handbook.
- U. S. Census of Population: 1960 (Occupation by Industry, PC (2) -7C).
- A.I.R Summary of National Employment Forecasts by Occupation and Industry. (See Appendix A)
- U. S. Census of Population: 1960 (State Reports and U. S. Summary, PC (1)-C and PC (1)-D series).

The first three of these references present data on a national basis. The last reference presents occupation by industry data in terms of intermediate occupation and intermediate industry groups for the country as a whole, for each state, and for standard metropolitan statistical areas of 250,000 or more. In addition to the sources above, information of particular significance for the employment area served by the Quincy vocational program may be available from state and local government offices.

Summary of Job Selection Data

The form shown in Figure 1 provides a convenient summary of relevant selection data and a checklist of considerations important in deciding whether to include a job in the sample. The entries required are those resulting from the six considerations discussed above. Sample entries have been made in Figure 1. The entries are not necessarily complete or fully accurate, but may serve to clarify use of the form.

First, note that one sheet should be completed for each job which has been selected. All data on the sheet refer to that job. With regard to specific line entries:

Job: Enter the name of the selected job. Where possible use a name from a standard source (e.g., Occupational Outlook Handbook) and give the source in parentheses. Where appropriate, also give a job code number (as in the Dictionary of Occupational Titles) or other identifying code. Identify the job code source if different from the name source.

Figure 1

JOB SELECTION DATA

JOB: All-Round Machinist (O.O.H., D.O.T. Code 4-75.010 and .120)

JOB FAMILY: Metals and Machines

SUB-FAMILY:

PRINCIPAL LOWER LEVEL JOBS: Machine Tool Operators (O.O.H., D.O.T. 4-78.000 Thru .589 and D.O.T. 6-78.000 Thru .589)

PRE-EMPLOYMENT TRAINING TIME: 7-8 Years Total. 3 Years Vocational High School. 4 Years Apprenticeship Course (Typically 8,000 Hours Shop Training and 570 Hours Classroom)

EMPLOYMENT QUALIFICATION REQUIREMENTS: Usually training as above. Sometimes equivalent in experience, especially Military.

TRAINING FACILITIES REQUIRED: Heavy machines, expensive gages, large space with special power and heavy floor loading capability.

KNOWN CHANGES IN JOB REQUIREMENTS: Some conversion to numerically controlled machines (especially milling machines) emphasizes knowledge of materials and procedures rather than operating skill.

INDUSTRIES: Fabricated metal products; Primary metals; Electrical machinery; Transportation equipment; Railroad; Chemical; Food processing; Textile; Federal Government.

EMPLOYMENT OUTLOOK: Moderate increase nationally. 7000 jobs/year due to attrition. Additional due to expansion especially in maintenance.

Job Family: Enter the name given (on page 15 of the study proposal) to the job family (or vocational area) within which the selected job falls.

Sub-Family: For some job families, it may be convenient to group the jobs into sub-families. In other job families, there may be no necessity for this intermediate classification. If it is decided that sub-families should be identified, enter the name you select for the sub-family within which the job falls. Sub-families, when used, should group together jobs which are similar with respect to training requirements, whatever other reasons there may be for the grouping. Jobs in different sub-families must differ with respect to the specific things incumbents must be able to do and with respect to the training necessary to acquire this ability.

Principal Lower Level Jobs: Identify any jobs for which a student would acquire important qualifications by completion of some part of the training required for the job described above. Identification of the lower level jobs should be recorded as for the job described above.

Pre-employment Training Time: Enter the amount of training time now required to qualify for employment in the job. This entry should show total time and the amount of time required in each major kind of training. For example: "Four years total. Three years vocational school, one year OJT."

Employment Qualification Requirements: List the significant requirements for employment in the job. These requirements may include apprenticeship, age, experience in other jobs, etc.

Training Facilities Required: List the items requiring significant capital or support outlays. These are items which are expensive to buy, require large amounts of space, need significant maintenance provisions, etc.

Known Changes in Job Requirements: Describe any changes now occurring or which will occur soon to change the tasks performed by incumbents in this job.

Industries: List the industries which employ significant numbers of people in this job. Use the industry classification of the Occupational Outlook Handbook for this purpose if at all possible.

Employment Outlook: Summarize your findings with respect to employment possibilities in the area served by the Quincy vocational program. Remember that absolute numbers of job openings expected are the proper measure of employment opportunity, not percentage growth. Rate the outlook on a three-point scale: many, moderate, few.

General Job Description

When a job has been identified and tentatively selected for the training program, the next step is to prepare a document which gives a general description of the job. The purpose of job description in this study is to provide information which will be useful in defining the behaviors required of an incumbent. Analysis of the behaviors will then provide a basis for the crucial step of identifying learnable skills and knowledges.

This paper will make suggestions about procedures for describing jobs. The procedures will begin with general characteristics of the job and its place in the world of work, and proceed to record progressively more detailed information down to the identification and enumeration of tasks performed by an incumbent. The job description requires information in the following six areas which are discussed in more detail in the remainder of this paper:

1. Definition of the job population.
2. Statement of the mission.
3. Segments of the job.
4. Varieties of job functions.
5. Contingencies
6. Task identification and enumeration.

A completed general description of the auto mechanic's job is appended to this paper for reference and illustration. (See Appendix B)

Definition of the Population. The initial section of the job description attempts to distinguish the jobs to be included from those of similar title which are not included. The industries or locations of jobs are also identified. In addition, a brief general description is given of formal characteristics of job incumbents. Such characteristics may include such elements as: (1) qualification requirements such as examinations and certificates, (2) nature and duration of training, (3) sex and age distributions, and (4) average high school achievement.

Statement of Mission. This statement identifies the different purposes and modes of operation which influence performance of the job. This statement can sometimes define alternative objectives and operational modes as well as indicating, where appropriate, hierarchies of goals. The statement of mission sets, in a sense, the criteria by which one might want to judge performance of the job.

Segments. Job segments are the identifiable and meaningful time periods or the major steps in the regular sequence of job performance. This section of the general job description identifies what may be called the sub-operations of the mission, and serves as an important organization for the tasks which are later to be described. Segments are usually determined by the time phases which structure performance of the job, and in this sense they indicate the sequence in which the sub-operations of the job are performed. At the same time, they also identify these categories of operations themselves. As a simple example, the segments of a waiter's job may be described as follows: (1) setting tables, (2) taking orders for food and beverages from guests, (3) turning in orders to kitchen or counter, (4) assembling orders, (5) serving food, (6) preparing and tendering the bill.

Varieties of Job Functions. This section of the job description lists general functions or activities performed on the job. A function is identified by an action verb and shows the worker's relationships to three components.

1. Objects or things such as equipment, tools, facilities.
2. Classes of data such as written instructions, quantitative and verbal information to be processed or communicated.
3. People.

The functions to be used in this section of the job description are defined in Appendix C. These are the functions established by the U. S. Employment Service for use in the Dictionary of Occupational Titles. Additional worker functions may be added if an appropriate definition cannot be found in Appendix C. If a new function is needed, its definition should be added to the present set and then used consistently.

Contingencies. This section of the general job description is devoted to an identification of the conditions under which the job is to be performed and the classes of unpredictable events or problems with which the worker might have to deal. Noteworthy conditions may include elements of either the physical or the organizational environment within which the job is to be performed. Contingencies have an aspect of danger, emergency, special challenge, or non-routine performance. Causes of contingencies may include such things as weather, accidents, illness, malfunctions.

Task Identification and Enumeration. A task is the smallest convenient unit of job activity having a separate purpose. It is a specific statement of action. Tasks are suggested throughout the process of preparing general job descriptions, particularly since this involves reviewing Department of Labor, union, association, industry, training, and guidance documents relating to each occupation. Defining the population helps to delineate the types of tasks which are and which are not applicable to the job being described. The statement of the mission or missions sets the objective toward which all tasks are aimed, either directly or indirectly. Each applicable function-component combination implies one or more task requirements. Segments can suggest both new varieties of tasks and ways of organizing task enumerations to help systematize and ensure comprehensiveness. Contingencies and contexts can suggest additional, particularly non-routine, tasks.

Most complex jobs include tasks that seem not to be fruitful in deriving general skills. Identification of such tasks before they have been described in detail can avoid the expenditure of large amounts of time for such description. To aid in the identification of tasks to be and not to be described in detail, the following classification of tasks has been established:

1. Basic - Tasks closely related to the central purposes of the occupation and typically performed by new incumbents and/or most journeymen. This is the only type of task described in detail.
2. Specialty - Tasks performed by a small proportion of incumbents or only rarely performed and not closely related to the central purposes of the occupation. Specialty tasks are listed but not described.
3. Advanced - Tasks that require considerable specialized training and/or job experience for their performance and which are only performed by the most senior workers. Advanced tasks are listed but not described if all of the parts of the task which are not "advanced" are redundant to "basic" tasks.
4. Ancillary - Tasks for which no training beyond grammar school is required or likely to be useful. Ancillary tasks are listed, but not described.
5. Redundant - Tasks that are repeated during the course of performing the job in essentially the same way. Redundant tasks are described only once but variations required in repeated performance are noted.

APPENDIX A

SUMMARY OF NATIONAL EMPLOYMENT FORECASTS BY OCCUPATION AND INDUSTRY

SUMMARY OF NATIONAL EMPLOYMENT FORECASTS
BY OCCUPATION AND INDUSTRY

Discussions with Bureau of Labor Statistics personnel suggested that the single best source of information to guide selection of jobs important for vocational education would be the Occupational Outlook Handbook, 1963-1964 edition. Accordingly, all industries and occupations in the Handbook were reviewed. Table 1 summarizes data on industry outlooks as given in the Handbook.

A preliminary selection of 84 occupations having significant potential vocational training implications was made and submitted to the Bureau of Labor Statistics. The Bureau both ranked and rated these occupations in terms of the number of openings likely to occur during the next decade. The rating was according to the three categories of (1) many opportunities, (2) a moderate number of opportunities, and (3) relatively few opportunities. Table 2 lists the 31 occupations that were rated as having relatively few opportunities. No further analysis has been made or is anticipated for these occupations.

Table 3 lists the 53 occupations rated as having many or a moderate number of opportunities and indicates the industries in which each occupation occurs.

The ratings of occupational outlooks must be used with caution since they involved a considerable subjective element due to missing data and a shortage of quantitative information about rates of employment change.

Table I

Industry	Employed	Projected	Notes
Apparel	1960 1.24 Million	1976 1.33 Million	Increase in employment is expected to be moderate. Most of the employment opportunities will be in sewing machine operator jobs. Tailoring and other skilled occupations will show only a small increase
Communication	1960 821,646	1975	Employment in the communication industry is expected to grow slowly. Most of the increased demand will be met by rising productivity rather than increase of workers.
Construction	1960 2.9 Million	1970 4.0 Million 1975 4.4 Million	Employment in the construction industry will rise at a rate much above the average for all nonfarm industries. Construction maintenance and repair is about one-third that of new construction and is expected to grow significantly during this period. Most rapid increases in employment are expected for asbestos & insulating workers; lathers; cement masons; glaziers; operating engineers; sheet-metal workers; and structural ornamental and reinforcing iron workers. Annual replacement needs range from 55,000 to 65,000 per year.
Electric Light and Power	1960 426,306	1975	Employment in this industry is expected to remain relatively stable, although the production of electricity will continue to increase. Employment is expected to decrease in generating, transmission and distribution operations but should increase in maintenance and repair occupations. Most of the employment will come about because of replacement needs.
Food and Lodging	1960 2,600,000	1975	Increase in employment is expected to be moderate for the industry as a whole. High employment demand for skilled cooks and restaurant managers. Turnover will account for most new jobs.

Table I Continued

Industry	Employed	Projected	Notes
Government	1960 8.5 Million	1970 11.0 Million 1975 12.8 Million	Nearly all of the increase in Government employment will be in State and Local Government agencies. Government employment is expected to increase by about one-third between 1960 and 1970.
Materials Manufacturing (Chemicals, Petroleum, Plastics, Paper Prod. and Proces)	1960	1975	Although this industry is expanding rapidly, employment is rising moderately. Most employment increases will be in the scientific and technical occupations. Among plant workers, the highest demand will be for skilled maintenance personnel.
Health and Welfare	1960 7,574,472	1975	Rapid expansion forseen in this industry as a result of population growth. Rapid employment increase in the technical occupations of this industry. 2 million in health occupations. 2 million in education occupations. 608,581 in welfare and religious occupations.
Equipment Manufacturing (Aerospace, automotive, electronics, appliance)	1960 6,375,000	1975	Employment increase is expected to be slow. Electrical machinery and instruments are growing rapidly while transportation is expected to decline.
Metal Production (mining, processing, fabrication	1960 3,066,000	1975 3,600,000	Employment in the Metals Production will increase very slowly. Employment in mining will decrease somewhat. Most employment increases are expected at the administration and professional level.
Maintenance and Repair	1960 2,750,000	1975	Maintenance and Repair is one of the fastest growing industries in the labor force. The fastest growing occupations in this industry are: a. Instrument Repairman b. Air Conditioning and Refrigeration mechanics c. Television and Radio Servicemen d. Appliance Serviceman

Table I **Continued**

Industry	Employed	Projected	Notes
Merchandising and Retail Trade	1960 11.4 Million	1970 14.0 Million 1975 15.6 Million	A large part of increased employment in this industry is expected to be among part-time workers. In 1960, **almost 60% of all self-employed** nonfarm proprietors were in this industry division.
Personal and Protective Services	1960 8,750,000	1975	Relatively rapid employment increase of protective service workers. Other service occupations will increase rapidly. Rapid employment increase for practical nurses and beauty operators; moderate increase for barbers.
Printing and Graphic Arts	1960 900,000	1976 1,250,000	Newspapers employ 340,000. Commercial establishments employ 280,000. Employment growth is expected to be moderate. Employment of skilled workers is expected to remain relatively stable. Replacement needs will be responsible for 5,000 to 6,000 jobs annually.
Transportation (Air, rail, bus, truck)	1960 2,739,399	1975	Employment in transportation is not expected to rise substantially. Employment in rail and water transportation is expected to decrease while air and truck transportation should increase.
Finance, Insurance, Real Estate	1960 2.7 Million	1970 3.5 Million 1975 3.9 Million	Banking is expected to have the most rapid employment growth. (1/4 of the workers in this industry are employed by banking institutions. Women comprise almost one half of industry's present employment.

Table 2

Occupations Judged to Have Relatively Few Employment Opportunities (Listed According to the Estimated Number of Opportunities Anticipated)

- Asbestos and Insulating Worker
- Airplane Mechanic
- Commercial Artist
- Lather
- Intercity Bus Driver, and Local Transit Bus Driver
- Lithographer
- Plasterer
- Setup-Man (Machine Tools)
- Dental Lab. Technician
- Chemical Technician
- Glazier
- Central Office Repairman, and Central Office Installer
- Typewriter Serviceman
- Telephone Operator
- Aeronautical Technician
- Metallurgical Technician
- Cash Register Serviceman, Calculating Machine Serviceman, and Adding Machine Serviceman
- Broadcast Technician
- Data Processing Equipment Serviceman
- Dental Hygienist
- Cabinet Maker
- Physical Therapist
- Boiler Maker
- Refinery Mechanic
- Duplication and Bookkeeping Machine Serviceman
- Accounting and Bookkeeping Machine Serviceman
- Dictation Machine Serviceman

APPENDIX B

GENERAL JOB DESCRIPTION

Auto Mechanic

AUTO MECHANIC

A. Defining the Population

The majority of auto mechanics are employed in repair shops in which all types of automotive maintenance and repair operations are performed and in service departments of new and used automobile dealers. Included in this definition also are those mechanics employed by government agencies, and establishment relying heavily on automotive or truck transportation i.e. bakeries, dairies and truck, taxicab and bus companies.

Excluded from this definition are:

1. Body and fender repairmen who are primarily concerned with shaping, finishing and replacing of sheet metal and replacing of trim and glass on motor vehicles.
2. Repairmen who perform only such specialty tasks as transmission, radiator, steering, electrical or air suspension repair.
3. Repairmen who perform machining operations such as grinding crankshafts and camshafts and machining various automotive parts.

B. Statement of Mission

The primary missions of the auto mechanic are:

1. Maintenance of motor vehicles
2. Repair of motor vehicles

Other, secondary, missions are listed below:

1. Estimating costs of repair
2. Advising customers in purchase, operation and maintenance of motor vehicles
3. Purchasing replacement parts

C. Functions and Components of Functions

Things	Data	People
Handling	Computing	Taking Instructions - Helping
Manipulating	Compiling	Exchanging Information
Operating - Controlling	Analyzing	
Precision Working		

The things the auto mechanic handles and manipulates are various hand tools and automotive parts and components. He operates-controls various test and service equipment. He must be able to make precise measurements and adjustments. The data functions with which the auto mechanic is concerned are computing costs of repairs, compiling various types of information obtained from inspections of motor vehicles and analyzing data in order to determine what necessary actions are to be taken to complete his mission. The mechanic's relation with people involve taking instructions or receiving information from supervisors and/or customers, helping fellow workers when necessary, and speaking to and signalling fellow workers or customers in order to convey information to them.

D. Segments

The main steps involved in the occupation of auto mechanic are: Diagnosis of automotive malfunctions, location of malfunctions and repair or adjustment of automobiles or trucks.

E. Contingencies and Contexts

1. May have to fabricate a replacement part (such as a gasket) when correct type is not available.
2. May have to improvise a tool when the tool ordinarily used is not available e.g. using standard wrenches when metric wrenches are not available.

3. Substitutes floor jacks in raising motor vehicles when hydraulic lift is inoperative.
4. May have to make emergency repairs on a vehicle on the road, if it cannot be towed to the repair shop.
5. May instruct customer over the phone about what to do when his vehicle is either broken down or malfunctioning (in order the customer be able to drive the vehicle to the repair shop).

Job contexts for the auto mechanic are quite varied, depending upon the situation in which he finds himself e.g. working in the service department of a new and/or used automobile dealer or in a small private repair shop. Very often, those working in establishments which employ a number of auto mechanics specialize in the repair and maintenance of particular makes and models of motor vehicles or particular systems of motor vehicles (such as electrical or ignition systems). On the other hand, those working on private or small repair shops may have to deal with many makes and models. The latter situation also requires the auto mechanic to perform tasks not directly related to the occupation such as ordering parts and executing other clerical duties which are generally carried out by the service manager in larger establishments. In addition, mechanics working in larger establishments have the advantage of working with highly specialized tools and testing equipment. Mechanics employed by establishments which operate fleets of trucks or automobiles e.g. truck or taxi companies are required to perform volume maintenance and repair work. They may also be required to perform such tasks as refueling and cleaning motor vehicles.

F. Task Classification

a. Basic Tasks

1. Diagnosis vehicle malfunctions
2. Tests electrical system
3. Tests ignition system

4. Tests fuel system
5. Tests cooling system
6. Tests lubrication system
7. Tests engine
8. Tests transmission
9. Tests steering system
10. Tests braking system
11. Checks suspension system
12. Checks exhaust system
13. Checks differential assembly
14. Removes engine
15. Removes engine accessories
16. Engine disassembly
17. Repairs cylinder head
18. Repairs oil pan
19. Removes cylinder ridge
20. Disassembles piston and connecting rod assembly
21. Repairs electrical system
22. Repairs ignition system
23. Repairs fuel system
24. Repairs engine
25. Assembles engine
26. Installs accessories
27. Installs engine
28. Services steering system
29. Services braking system
30. Services suspension system
31. Services exhaust system
32. Lubricates chassis
33. Tunes engine
34. Estimates costs of repair

b. Specialty Tasks

1. Transmission repair (Standard & automatic transmissions)
2. Steering system repair (Mechanical & power steering)
3. Cooling system repair
4. Air suspension repair
5. Power accessory repair
6. Most machining operations

c. Advanced Tasks

1. Rebuilding and overhaul of various automotive components
2. Modification of motor vehicles

d. Ancillary Tasks

1. Cleaning various components and parts
2. Most replacement tasks (these consist of removing or unfastening the component or part to be replaced and installing [reverse of removing] the replacement part or component)

e. Redundant Tasks

1. Removal of nuts, bolts and screws
2. Removal of valves, piston and connecting rod assemblies, main bearings, wheels, etc.
3. Replacement or installation of the above mentioned components and parts

APPENDIX C

DEFINITIONS OF JOB FUNCTIONS

DEFINITIONS OF JOB FUNCTIONS

All activities of a job involve a relationship to things, to data, and to people in some degree. The relationships which a worker has to each of these components can be defined as functions particular to that component and thus characterize his activities. The definitions of job functions are, therefore, grouped by component. Functions carried out with things are defined first. Functions carried out with data are defined second. Functions carried out with respect to people are defined last.

Observing and learning are involved in all other functions. Consequently, neither is to be found in the lists which follow and neither need be included in the job description.

THINGS FUNCTIONS

Handling

Using body members, hand tools, and/or special devices to work, move or carry objects or materials and involving little or no latitude for judgment with regard to attainment of standards or in selecting appropriate tool, object, or material. Examples include situations that involve a small number of special tools fairly obvious as to purpose, such as a broom, a special purpose end wrench, grass shears, go no-go gauges. Dimensional precision can vary from rough to fine, being built into the structure of the task(s).

Tending

Starting, stopping, and observing (also, where necessary, feeding or off-bearing material or product) the functioning of machines and equipment. Tending involves adjusting material or controls of the machine, such as changing guides, adjusting timers and temperature gauges, turning valves to allow flow of materials, flipping switches in response to lights or needle indicators. Judgment involved in making these adjustments may be a little more difficult than for Handling, particularly if worker is machine paced. However, built-in guides facilitate the use of judgment; responsibility is usually greater because of cost of machine or equipment.

Manipulating

Using body members, tools, or special devices to work, move, guide, or place or measure objects or materials, and involving some latitude for judgment with regard to precision attained and selecting appropriate tool, object, or material although this is readily manifest, e.g., rough breadboarding and unit testing (bench trial and error) to check-out element and component values. Finish and appearance of breadboards not primary objective. Dimensional precision can vary from rough to fine, being a function of tools and technology.

APPENDIX B

FORMS USED FOR COLLECTING JOB DATA

FORMS USED FOR COLLECTING JOB DATA

Three forms have been adopted for collecting data to be used in selecting jobs to be included in the training curricula and to describe those jobs. Examples of these forms appear on the next three pages in the order described here. The examples shown are only partially complete.

1. Form 1 is designed to be used in listing jobs identified as being in the area under consideration by each of the coordinators. Provision is made for simply checking whether or not each job listed should be selected for more detailed description according to criteria supplied the coordinator and described in the document in Appendix A. The last column headed "Reason" provides space for indicating by code numbers the reasons for rejecting a job if it has been rejected.

2. Form 2 is designed to provide information needed to further screen and reduce the number of jobs to be included for complete description and inclusion in the training program. The form as it appears here is a revision of the form suggested in the document in Appendix A. Specifications of the information to be recorded on the form also appear in that document.

3. Form 3 provides space for listing tasks associated with each of the jobs described on Form 2. Provision is made for classifying tasks into categories suggested in the document mentioned above. The third and final column will be used in analysis to be conducted in subsequent phases of the project.

3 - Electro-electronics (Electronics)

	1. JOB NAME	2. SELECT		3. REASON
		Yes	No	
1.	Electronic Technician			
2.	Wireman	✓		
3.	Senior Test Technician			
4.	Test Technician			
5.	Electro-Mechanic Assembler			
6.	Electrical Wireman			
7.	Apprentice Electronics Technician			
8.	Repair Technician			
9.	Wireman Assembler			
10.	Panel Assembler			
11.	Construction Technician			
12.	Environmental Technician			
13.	T.V. Serviceman			
14.	Senior Test Equipment Technician			
15.	Appliance Technician			
16.	Special Equipment Wireman			
17.	Field Technician			
18.	Electronic Assembler			
19.	Electronic Circuit Technician			
20.	Meter Technician			
21.	Microwave Technician			
22.	Communication Technician			

Project Able-Form 1
3 - 1 - (1-22) - * - 1

Accept Reject

1. JOB FAMILY Electro-electronics	2. COORDINATOR(S) D. R. Kaupp	3. DATE 5/20/65

4. SUBFAMILY

Electronics

5. JOB NAME Wireman

5a. EQUIVALENT NAMES

May be combined with Assembler and/or Solderer

6. LOWER LEVEL JOBS

None

7. PRE-EMPLOYMENT TRAINING TIME (Beyond 8th Grade)

ACADEMIC	VOC-TECH TRNG.	MILITARY EXP.	INDUSTRIAL EXP.
None	6 months	None	1 month

8. EMPLOYMENT QUALIFICATION REQUIREMENTS

PHYSICAL	LEGAL	TOTAL TRNG.	OTHER
Normal	None	7 months	

9. TRAINING FACILITIES REQUIRED Government, NASA, and a variety of commercial specifications as well as standard tools and equipment of the trade.

10. INDUSTRIES USERS All electronic manufacturing companies.

11. KNOWN CHANGES IN JOB REQUIREMENTS Increasing emphasis on miniaturization and solid state circuitry.

12. EMPLOYMENT OUTLOOK

Local	National
Always in demand as this job function is fundamental to all production of electronic equipment. Demand expected to rise continually through next five years (Occupational Outlook Handbook 1963, p. 587).	Same as local.

Project Able-Form 2
3 - 1 - (#2) - *

3 - Electro-electronics (Electronics)

1. TASK NAME (Wireman)	2. TYPE	3. CODE
All tasks of the Solderer plus the following:		
1. Stripping Wires & Cables		
2. Uses Crimping Tool		
3. Cables		
4. Makes Wiring Harnesses		
5. Makes Wrap Connections		
6. Makes Screw Connections		
7. Pulls Cables & Wires		
8. Mounts Components		
9. Reads Schematics Layouts		
10. Reads Color Codes		
11. Makes Continuity Checks		
12. Selects Wires & Cables		
13. Measures Wire Lengths		
14. Installs Electrical Hardware		
15. Insulates Wires		
16. Cuts Wires		
17. Reads Run Sheets, Specifications Sheets		

Project Able-Form 3

3 - [illegible] - (#2) - 1 - 17

APPENDIX C

SUGGESTED PROCEDURE FOR DEVELOPMENT OF GUIDANCE PROGRAM

SUGGESTED PROCEDURE FOR DEVELOPMENT OF GUIDANCE PROGRAM

1. **Describe the Guidance Program as It Now Exists in the Quincy Public Schools.**

   This description should be in report form suitable for inclusion as a section or as an appendix in our quarterly report due 30 June 1965. The report should be complete, but concise. Suggest that it be organized around a set of specific objectives, so that the report describes Quincy methods for meeting each objective. It is important that this report be systematic, objective, and factual. It provides the basis for all that follows.

2. **Define Specific Objectives and Requirements for a Guidance Program Adequate to the New School Program.**

   This step is analogous to the statement of curriculum objectives. That is, objectives must be stated in terms which permit their achievement to be evaluated as directly as possible. Two major problems to be solved are: (a) providing pre-entry guidance for Jr. High students, and (b) providing effective guidance to students after they enter the new curriculum. It is important that objectives be established which will assure that Jr. High students are informed about the new opportunities and that substantial numbers of them apply for entry into the new curriculum. For students enrolled in the new curriculum, it is important that objectives be established which lead to means for handling the very different guidance problems associated with individualized instruction and progress. Objectives for the guidance program will be discussed with the Advisory Panel just as curriculum objectives will be. First discussions with the panel should be scheduled for the second meeting, probably in September 1965. A progress report on objectives of the guidance program is needed for our second quarterly report due 30 September 1965.

3. Define a Plan for Meeting Each Program Objective.

This is the heart of the new program development. Plans should be specific. That is, they should define actions to be taken, identify the person(s) by whom the action is required, specify dates, methods, and materials. This is the program except for the actual materials to be used.

Probably, much of the present guidance program can be used unchanged, especially for Jr. High students. As much of the present system as can be used as is, or with limited modification, should be incorporated in the new system. It is expected, however, that the new school situation and the analyses done in 1 and 2 above will require development of some new methods and techniques. When they are needed, new program elements should be incorporated without hesitation.

Priority in this work probably must go to the Jr. High guidance program since it must be installed by September 1966 which is a year before the new school is opened. Plans for the Jr. High program should be presented to the Advisory Panel's third meeting, probably in January 1966. A progress report on objectives and on program plans is needed for our third quarterly report due 31 December 1965.

4. Develop Plan for Training Couselors and Teachers.

Actually, this step is properly part of step 3. It is listed separately for emphasis and to point out that this training comes prior to installation of the guidance program for students. Jr. High counselors' and teachers' training must be completed prior to school in September 1966. Thus, the training must be arranged for and conducted either during the 1965-1966 school year or during the summer of 1966. Jr. High staff training plans should be presented to the Advisory Panel's fourth meeting and reported, substantially complete, in the 31 March 1966 quarterly report. Senior High staff training can follow Jr. High staff training by as much as a year. However, it is expected that the high school program will be quite different from anything which now exists, will require much cooperative planning by those concerned with counseling and those concerned with curriculum and administration, and will require more staff training time. Plans for Senior High staff training should be presented to the Advisory Panel's sixth meeting, probably in February 1967. Progress on Senior High plans should be covered in our quarterly reports beginning as early as information is available.

5. Develop Materials to Support Staff Training and the Guidance Program.

As with steps 3 and 4, the Jr. High materials must have priority because of schedule. Jr. High materials for staff training must be complete by June 1966, or earlier if training is scheduled before summer 1966. Guidance program materials should be ready in time for staff training if at all possible. Jr. High training and program materials should be reviewed by the Advisory Panel no later than their fourth meeting, probably in June 1966, and should be fully reported in our quarterly report due 30 June 1966. Senior High staff materials should be presented to the Advisory Panel's sixth meeting, probably in February 1967. Senior High guidance program materials should be reviewed by the Advisory Panel no later than their seventh meeting, probably in May 1967 and fully reported in our quarterly report due 30 June 1967.

6. Install and Try Out Guidance Programs.

Specific plans must be prepared for the installation of guidance programs. It is important that procedures be provided whereby necessary or desirable alterations in the programs are promptly detected, effected, and documented. Plans for installation and tryout should be part of and follow the schedules of step 3.

7. Program Evaluation.

One unique aspect of the Quincy program is the requirement for objective program evaluation. This means that procedures must be devised whereby the effects of the guidance program are evaluated in objective terms. Data for this evaluation must be defined in advance of program installation, collected from the time of installation, and reported in our regular report series. One reason for insisting on specific, measurable objectives is that this is the only kind of objective for which achievement can be measured. To some extent, the evaluation program is defined when program objectives are stated. Nevertheless, a formal plan for program evaluation must be prepared, reviewed by the Advisory Panel, executed, and fully reported in our final report. Consideration should be given to evaluation data available during tryout years and to follow-up data from graduates.

APPENDIX D

QUINCY PUBLIC SCHOOLS
GUIDANCE PROGRAM: SECONDARY SCHOOLS

QUINCY PUBLIC SCHOOLS

GUIDANCE PROGRAM: SECONDARY SCHOOLS
April 1965

PHILOSOPHY - In Quincy, guidance is defined as an effort to help students utilize meaningfully what they have within themselves and what they can acquire from their environment so that their individual development may be enhanced and maximum contributions to society made possible.

OBJECTIVES AND FUNCTIONS

A. GENERAL

Through specified staff functions, guidance seeks to extend awareness of own potential and knowledge of opportunities, to assist students in self-understanding and planning, and insofar as possible to eliminate impedimentia to learning. Desired outcomes in terms of the individuals served include personal growth and meaningful self-direction; maximum accomplishment and commitment.

B. SPECIFIC

At the secondary level, formal guidance service is rendered through designated, qualified counseling personnel with involvement as appropriate of mental health consultants, headquarters guidance staff members, and other resource persons available on a city-wide basis.

The objectives of the guidance program may be categorized in several general areas. Within each of these areas, more specific objectives and the guidance functions associated with them are identified.

Assisting Students in Decision-making and Preparing Students to Make their Own Choice

Specific Objectives

To provide appropriate assistance for each student in terms of his needs in making important decisions in relation to career selections and in resolving his problems.

When confronted with making a decision as to further education or immediate entry into a vocation, the technical secondary school student is able to make his own choice using his knowledge of his personal achievements, specific aptitudes, interests, and deficiencies in terms of educational/training prerequisites and vocational information.

Guidance Functions

Interviews with individual students for purposes of inquiry, information-giving discussion concerning progress, adjustment, potential, educational-vocational goals.

Interpretation of test and achievement data to individual students and parents with emphasis upon strengths and implications for action.

Assistance to individual students and parents in curriculum choice, in long-range planning, in obtaining scholarship aid.

Arrangement for and/or conduct vocational exploration through interviews, visits, guided independent study, career Big Brother, work experience.

Placement of students in cooperation with other departments within the school for group placement, job placement, school and college placement.

Involvement of counselees in guidance activities including panels, seminars, dialogues, vocational interviews, field trips, orientation programs for younger students.

Promotion of student interest in and use of guidance reference materials and self-administering guidance aids including listening posts, other special devices (e.g., college view deck).

Collaboration in school effort to highlight for students and the community the significance of automation, and the implications for education.

Supportive counseling with selected students directed toward specific goals.

Testing and Record Keeping

Specific Objectives	Guidance Functions
To use standard tests and other valid measurement instruments and techniques to procure essential information on each student's progress, status and learning potential.	Obtaining and supplying data concerning individual counselees including: new enrollees; graduates, transfers, terminal prior to graduation; follow-up of graduates and drop-outs; data compilation, analysis and interpretation.
To compile, interpret, and record estimates of each student's aptitudes, achievements, interests, as well as personal/social assets and deficiencies at regular intervals during his enrollment in school.	Study of test ratings, term marks, cumulative records, school staff, reports: consolidate, interpret, record.
	Responsibility for aptitude and interest testing followed by group discussion on testing and test ratings.

Utilizing Special Services

Specific Objective	Guidance Functions
To use, or cause to be used, all available special services in relation to student personal adjustment, social adaptation, and career selection at appropriate times and places.	Collaboration with health service and involvement of teaching personnel in work with individual situations as appropriate. Preparation of case material for Preview Conference with mental health consultant and headquarters guidance staff member serving the school. Preparation of request forms for psychological evaluation; for investigation, leading to other than school agency referral if indicated. Placement of students in cooperation with other departments within the school for group placement, job placement, and school and college placement. Large-group and special interest programs with use of student participants, guest speakers, and panelists, including use of resource persons including mental health consultants, guidance department college consultants, representatives from business, industry educational institutions, armed services.

Communicating Information to Students and Parents

Specific Objectives

To communicate essential information and assistance to each student and his parents, at least once each year, what is known of his learning potential, growth, development, and noted special needs.

To provide information to students and their parents to facilitate the transition from the elementary school to junior high school, from junior high school to senior high school, and from senior high school and trade school to vocational life or higher education or training institutions.

To provide student knowledge of typical vocations, prerequisition for entry, and characteristics of at least three job fields.

To provide students with general information concerning the changing world and the implications of modifications for vocational choice, adaptation, wholesome living, and responsibility as a citizen.

Guidance Functions

Conferences with parents.

Interpretation of test and achievement data to individual students and parents with emphasis upon strengths and implications for action.

Assistance to individual students and parents in curriculum choice, in long-range planning and in obtaining scholarship aid.

Arrange for and conduct vocational exploration through interviews, visits, guided independent study, career Big Brother, work experience.

College and school visits, staff-field trips to business and industry, local conferences to obtain information concerning educational and vocational opportunities, requirements, and trends.

Presentation of information regarding achievement-motivation, psychology of learning, human behavior, self-understanding, the changing world, career opportunities, colleges and college entrance, technical and other post high school programs, military service employment.

Provision of orientation programs and activities including student handbook and pre-orientation programs in schools.

Setting up of parent programs to present information pertinent to guidance services and resources.

Assisting and Advising Administrative Staff

Specific Objectives	Guidance Functions
To provide assistance for the supervisory staff and faculty to prevent, recognize, and assist in correcting student adjustment problem situation.	Communication between couselor staff and faculty members concerning individual students.
To advise the Superintendent of Schools concerning conditions and school policies conducive to student mental health and optimal student performance.	Collaboration with administration persons in the investigation and handling of individual unusual situations in school adjustment or placement.
	Preparation of case material for Preview Conference with mental health consultant and headquarters guidance staff member serving the school.
	Preparation of case material for Review Board at main office level and participation in session.

Serving as Liaison between Teachers, Parents, other School Units and Community

Specific Objectives	Guidance Functions
To establish, maintain, and enhance liaison with the teachers and parents of each student who manifests need for special attention due to impaired physical or intellectual function, unwholesome behavior, unhealthy emotional patterns, or ineffective learning performance. To compile appropriate records and forward essential information to institutions of higher learning on each student who plans further education or training.	Obtaining and supplying data concerning individual counselees; including new enrollees; graduates, transfers, terminal prior to graduation; follow-up of graduates and drop-outs; data compilation, analysis, and interpretation. Communication between counselor, staff and faculty members concerning individual students. Conferences with parents. Discussion of school offerings with groups of students and parents. The feeding back of significant information to appropriate persons and making recommendations based on observations and findings.

GENERAL COUNSELOR ACTIVITIES

1. The promotion of guidance service.
2. Participation in an on-going program of in-service training including
   - a. On-the-job training in case-handling.
   - b. Selection and development of guidance materials and programs.
   - c. Seminars, special conferences, department meetings.
   - d. Committee activities surveys.
   - e. Interviews, visits, field-trips.
3. Availability after school hours, with special provisions for parent conferences.
4. Collaboration with other school units to insure continuity in the progress of a child through the school system.
5. Research for new ideas and techniques to better serve counselees.
6. Involvement in pilot projects, leadership-action programs.

SUMMARY - The over-all objective of guidance service is to contribute to the motivation and adequacy of each student to meet the challenges and to cope constructively with the tasks, stresses, and choices with which he is confronted.

The guidance program in Quincy is a dynamically evolving program, continually attempting to determine its impact. It is continually changing in light of changing student needs in a changing world.

APPENDIX E

ADVISORY PANEL INFORMATION

PROJECT ABLE ADVISORY PANEL

Dr. Handen L. Forkner New York City	Business Education
Mr. Richard B. Ford Carnegie Institute of Technology	Social Studies
Miss Anne Donovan U. S. Office of Education	Women's Vocational Education
Mr. Norman C. Harris University of Michigan	Vocational Education; Mathematics; Science
Professor Gyorgy Kepes Massachusetts Institute of Technology	Arts
Dr. Joseph T. Nerden North Carolina State College	Vocational Education
Dr. Erwin R. Steinberg Carnegie Institute of Technology	English

PARTICIPANTS

Project ABLE Advisory Panel Meeting

Advisory Panel Members

Miss Anne Donovan	U. S. Office of Education
Mr. Richard B. Ford	Carnegie Institute of Technology
Mr. Norman C. Harris	University of Michigan
Dr. Joseph T. Nerden	North Carolina State College
Dr. Erwin R. Steinberg	Carnegie Institute of Technology

Quincy Public Schools

Mr. Robert E. Pruitt	Superintendent
Mr. Maurice J. Daly	Assistant Superintendent
Mr. Lloyd M. Creighton	Principal, Quincy High School
Mr. John W. Walsh	Principal, North Quincy High School

American Institutes for Research

Dr. Robert M. Gagne'	Director of Research
Dr. Edward J. Morrison	Project Director

AGENDA

Meeting of Advisory Panel--Project ABLE
Quincy, Massachusetts--26 June 1965

0900	Meeting called to order Robert M. Gagné, Chairman
0905	Welcoming Remarks Background and Goals for the project in relation to the Quincy Schools Robert E. Pruitt, Superintendent
0930	An overview of the projects objectives, procedures, and outcomes Edward J. Morrison, Project Director
1000	Discussion of the Project
1200	Lunch
1330	Reconvene Administrative matters Time of future meeting
1345	The problem of defining objectives
1400	Discussion
1600	Adjournment

VT 001 393

Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School. Second Quarterly Technical Report, The Problem of Defining Objectives.

Morrison, Edward J.
American Institutes for Research, Pittsburgh, Pa.
Pub Date - 30Sep65
MF AVAILABLE IN VT-ERIC SET. 36p.

*CURRICULUM DEVELOPMENT, *EDUCATIONAL OBJECTIVES, *EXPERIMENTAL CURRICULUM, *VOCATIONAL EDUCATION, *GUIDANCE PROGRAMS, Project ABLE, Quincy, Massachusetts,

Activity from July 1 through September 30, 1965 was concentrated on developing objectives for the instructional and guidance programs. The instructional objectives sought were unambiguous statements of successful student performance which include the criteria of success and the important conditions under which the performance is to take place. Criteria specified that an objective should faithfully communicate the author's intent, be a statement about the student, specify the criterion of acceptable performance, imply the appropriate test or evaluation of learning, imply appropriate learning conditions, and have appropriate specificity. An objective was defined by translating the general goal into a performance statement at the same level of generality. A second set of statements covered all the capabilities to be included for consideration at that level of generality. This process was continued until the statements produced were descriptions of task performance. To achieve the instructional objectives, each student must be provided with the assistance, guidance, and direction needed for success. The general objective of the guidance program is to assist the student as necessary to insure his progress toward realistic goals of vocational satisfaction, responsible citizenship, and self-fulfillment while encouraging his maximum participation in decision making. (HC)

VT 001 393

ED022065

RESEARCH LIBRARY
THE CENTER FOR VOCATIONAL
AND TECHNICAL EDUCATION
THE OHIO STATE UNIVERSITY

SECOND QUARTERLY TECHNICAL REPORT
Project No. 5-0009
Contract No. OE-5-85-019

DEVELOPMENT AND EVALUATION OF AN EXPERIMENTAL CURRICULUM FOR THE NEW QUINCY (MASS.) VOCATIONAL-TECHNICAL SCHOOL

The Problem of Defining Objectives

30 September 1965

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

593

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

RESEARCH LIBRARY
THE CENTER FOR VOCATIONAL
AND TECHNICAL EDUCATION
THE OHIO STATE UNIVERSITY

DEVELOPMENT AND EVALUATION OF AN EXPERIMENTAL CURRICULUM FOR THE NEW QUINCY (MASS.) VOCATIONAL-TECHNICAL SCHOOL

The Problem of Defining Objectives

Project No. 5-0009
Contract No. OE-5-85-019

Edward J. Morrison

30 September 1965

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

American Institutes for Research
Pittsburgh, Pennsylvania

RESEARCH LIBRARY
THE CENTER FOR VOCATIONAL
AND TECHNICAL EDUCATION
THE OHIO STATE UNIVERSITY

TABLE OF CONTENTS

Page

FOREWORD i
PROJECT OVERVIEW ii
REPORT SUMMARY iii
THE PROBLEM OF DEFINING OBJECTIVES 1
    Criteria for Objectives 2
    Defining Instructional Objectives for Project ABLE 7
        General Procedure 8
        Defining the General Goal 9
        Vocational Objectives 11
        Citizenship Objectives 13
        Self-fulfillment Objectives 16
    Defining Guidance Program Objectives 22
REFERENCES 27
PLANS FOR NEXT QUARTER 29
APPENDIX A. Example Logical Structure: "Citizenship Objectives" 30

FOREWORD

This report, submitted in compliance with Article 3 of the contract, reports on technical activities of Project ABLE during its second quarter of operation, 1 July through 30 September 1965. A brief overview of the project is presented first, followed by a report summary which includes a short review of technical schedules. The major portion of the report is devoted to consideration of educational objectives and includes a discussion of criteria for objectives followed by sections on defining instructional objectives in Project ABLE and on objectives for the guidance program. Plans for next quarter are outlined.

OVERVIEW: Project ABLE

A Joint Research Project of: Public Schools of Quincy, Massachusetts
and American Institutes for Research

Title: DEVELOPMENT AND EVALUATION OF AN EXPERIMENTAL CURRICULUM FOR THE NEW QUINCY (MASS.) VOCATIONAL-TECHNICAL SCHOOL

Objectives: The principal goal of the project is to demonstrate increased effectiveness of instruction whose content is explicitly derived from analysis of desired behavior after graduation, and which, in addition, attempts to apply newly developed educational technology to the design, conduct, and evaluation of vocational education. Included in this new technology are methods of defining educational objectives, deriving topical content for courses, preparation of students in prerequisite knowledges and attitudes, individualizing instruction, measuring student achievement, and establishing a system for evaluating program results in terms of outcomes following graduation.

Procedure: The procedure begins with the collection of vocational information for representative jobs in eleven different vocational areas. Analysis will then be made of the performances required for job execution, resulting in descriptions of essential classes of performance which need to be learned. On the basis of this information, a panel of educational and vocational scholars will develop recommended objectives for a vocational curriculum which incorporates the goals of (1) vocational competence; (2) responsible citizenship; and (3) individual self-fulfillment. A curriculum then will be designed in topic form to provide for comprehensiveness, and also for flexibility of coverage, for each of the vocational areas. Guidance programs and prerequisite instruction to prepare junior high students also will be designed. Selection of instructional materials, methods, and aids, and design of materials, when required, will also be undertaken. An important step will be the development of performance measures tied to the objectives of instruction. Methods of instruction will be devised to make possible individualized student progression and selection of alternative programs, and teacher-training materials will be developed to accomplish inservice teacher education of Quincy School Personnel. A plan will be developed for conducting program evaluation not only in terms of end-of-year examinations, but also in terms of continuing follow-up of outcomes after graduation.

Time Schedule:	Begin	1 April 1965
	Complete	31 March 1970
	Present Contract to 30 June 1966	

REPORT SUMMARY

During the present reporting period, technical activity has been concentrated on development of project objectives for instruction and for the guidance program. The objectives sought are unambiguous statements of successful student performance which include the criteria of success and the important conditions under which the performance is to take place. Before such objectives can be selected, a logical structure must be developed through which specific objectives can be related to the broad educational goals of the curriculum. This report reviews criteria for objectives, describes the necessary logical structure, and illustrates its application in Project ABLE. In addition, the development of objectives for the guidance program is reviewed and related to the development of instructional objectives.

During the immediately preceding quarter, activity centered on vocational analysis and review of guidance program needs, work which was an essential preliminary to the development of objectives. During next quarter, the Advisory Panel will review objectives so far developed, objectives will be revised and augmented, and derivation of topic objectives will begin.

THE PROBLEM OF DEFINING OBJECTIVES

INTRODUCTION

The time has long since past when it was necessary to defend the proposition that objectives are needed before an educational program is developed. The importance of defining instructional objectives as an initial step in the planning of instruction has been emphasized at least since the pioneering work of Tyler (1934, 1949). Attention now has shifted to the problems of identifying the criteria for objectives and to the process of arriving at objectives which meet the criteria.

This paper reports on the status of Project ABLE with respect to development of objectives for the new curriculum and for the guidance program. Since the development of objectives is not complete at this writing, the report may be likened to a snapshot of work in progress taken on 30 September 1965. Many changes have taken place before this picture. More changes can be expected after the picture. But, as of this date, the report faithfully records the status of the process.

The first of the three sections which follow reviews briefly the major criteria now recognized for instructional objectives. The second section discusses the development of objectives for the curriculum in Project ABLE. The last section summarizes the development of objectives for the guidance program.

CRITERIA FOR OBJECTIVES

Fidelity in Communication

Probably, the basic requirement for an educational objective is that it communicate unambiguously the intent of its author. Without such clarity, an objective has little chance to influence the educational process. Thus, only when an objective communicates without ambiguity can measures be developed to determine with confidence whether the objective has been met, or can learning experiences be devised to develop the desired capabilities in students, or can students use the objective as a guide to their efforts, or can sets of objectives be assessed for appropriateness and completeness. Lindvall (1964, p. 1) notes that in many schools,

> "...an outside observer may have difficulty in relating what he sees taking place in the day-by-day instruction in a classroom to the school's philosophy of education ....(because objectives) are stated in such a general form that any teacher can look at them and, no matter what he does with his classes, can convince himself that these are the purposes that guide his teaching."

To avoid this kind of confusion, objectives must use language and be so stated as to minimize the possibility of misinterpretation.

Statement About Students

Learning involves changes in the capabilities of students. That is, a student has learned when he is able to demonstrate some capability which he could not demonstrate before the learning experience. Various teaching methods might be used in support of the students' learning activities, but teaching methods and aids are not the objectives of learning. Objectives should be statements about the student.

Statement of Performance

At least three relatively independent sources have recognized that communication is much improved when objectives are stated as observable performances of the student. Thus, educational testing and evaluation is an area from which emphasis on behavioral statements of objectives has been persistent since Tyler's early work wherein he wrote, "Each objective must be defined in terms which clarify the kind of behavior which the course should help to develop among the students; that is to say, a statement is needed which explains the meaning of the objective by describing the reactions we can expect of persons who have reached the objectives" (Tyler, 1934, p. 18).

A second source of emphasis is the work in military technical training where it was found essential to specify the performances expected of a student upon completion of training. Several accounts of the procedures for development of training objectives by "task description" are available (Folley, Fairman, & Jones, 1960; Miller, 1962; Smith, 1964).

Finally, nearly all of the work on programmed instruction has proceeded by specifying instructional objectives first. A particularly readable guide to the preparation of objectives for instructional programs and some examples of the benefits of stating objectives in terms of the terminal behavior expected of the learner is provided by Mager (1962). He, as well as others, emphasizes that the objective must include specification of the important conditions under which the desired behavior is expected to occur and the criterion of acceptable performance.

Implications for Evaluation

Since there is the need to assess students' learning progress, objectives are preferred which indicate the criteria for successful learning. The only way to verify that learning has occurred and to identify what was learned is to require the student to demonstrate his new capability in some kind of observable performance. Therefore, the objective we seek is of the type described in the preceding paragraph, namely, one which specifies the end performance desired of the student. It is important, of course, that the objective and the evaluation agree as to the criterion performance. Otherwise, the evaluation would not assess the student's learning of the stated objective. To avoid this difficulty, objectives must specify the important conditions under which the student must demonstrate his new capability and must clearly state the criteria by which his performance will be judged to show that the desired learning has, or has not, taken place. Objectives stated in this way directly imply the appropriate test or evaluation of learning.

Implications for Training

Objectives also might be used as a basis for devising what Gagné (1964) has called effective tactics of instruction. If objectives could be written for which the effective conditions for learning were indicated directly, their value would be greatly enhanced.

In the effort further to improve communication and to aid in the planning of learning experiences, taxonomies of educational objectives have been prepared (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956; Krathwohl, Bloom, & Masia, 1964). These taxonomies classify the intended behavior of students. The behaviors are considered to constitute a hierarchy. Consistent use of the categories of behavior as defined in these documents surely would succeed in improving the communication possibilities of many heretofore poorly defined words. However, Gagné (1964) points out that the categories of behavior defined by these taxonomies do not clearly correspond to a similar variety of learning conditions. The kind of behavior defined in one category does not always require a set of learning conditions which is different from the set required by other behavior categories.

The selection of learning units, the sequence of units and the conditions under which each learning should take place all are arrived at by way of analysis proceeding from the objective stated in performance terms. The process, described by Gagné (1962), begins by identifying the capability required for performance of the task which is the objective. The question then is asked, "What kinds of previously learned capabilities need to be assumed if the person is going to learn this capability under a single set of learning conditions?" The answer to this question identifies one or more new capabilities which are simpler and more general than the capability from which they were derived. The procedure for each subordinate capability is repeated until a hierarchy of capabilities is defined, the lowest level of which is not analyzable further or is within the repertoire of all students involved. The subordinate capabilities thus defined become the units of instruction.

Since a unit is a capability which is appropriately learned under one particular set of learning conditions, the categories of learning conditions identified by Gagné (1964; 1965a) as corresponding to particular capabilities are useful in differentiating learning units and in devising effective learning experiences. Practical procedures to facilitate the analysis of objectives have been described (e.g., Miller, 1962) as "task analysis." However, there is no taxonomy of performances (tasks) which can be used in stating "course" objectives so as to have direct differential implications for appropriate learning conditions.

Appropriate Specificity

Tyler (1964) has observed that clarity sometimes is confused with a high degree of specificity when selecting the capabilities to be represented in course objectives. He emphasizes that empirical evidence, gathered from experience in using an objective, is essential to final evaluation of the appropriateness of its level of generality. He suggests, however, that the appropriate level of generality is the level of behavior which is required for effective use in life. That is, the performance required by a course objective should be a behavior which can be valued in and of itself. This consideration results in objectives similar to the "tasks" defined in military training research as, "a group of activities that generally occur close together and have a common purpose" (Smith, 1964, p. 14). An example of a performance suiting Tyler's criterion and Smith's definition would be: repair a carburetor; another would be: translate into English a paragraph from a French newspaper.

This brief review suggests that the educational objectives we should seek are unambiguous statements of student performance which include the

the criteria of success and the important conditions under which the performance is to take place. The purpose of the next section of this report is to describe the development of such objectives for Project ABLE.

DEFINING INSTRUCTIONAL OBJECTIVES FOR PROJECT ABLE

The goals of education have been formulated variously by a number of individuals and groups (Commission on the Reorganization of Secondary Education, 1918; Educational Policies Commission, 1938; Gardner, 1960; National Education Association, 1964; Rockefeller Brothers Fund, 1958). Some of these formulations have found wide acceptance and have been used by many school systems in developing statements of basic purpose or philosophy. There is a consistency in the goals emphasized by these groups (Gagné, 1965b). Thus, there is consensus that education has the purposes of:

1. developing individuals' talents so that they may achieve satisfaction in a life work or vocation,
2. developing responsible citizenship, and
3. making it possible for the individual to participate in and share with others a variety of aesthetic experiences.

These three goals were considered at the outset to be appropriate broad objectives for Project ABLE and it was planned that a curriculum would be developed to satisfy each of them. Thus, it was said,

> "...education is not conceived as being narrowly vocational, but rather as designed to produce effective and well-adjusted citizens for the modern world. Accordingly, the design of curricula and instructional procedures is intended to place suitable emphasis upon the need for generalizable knowledge having the aims of responsible citizenship, self-fulfillment as an individual, as well as flexibility of vocational choice in the face of changing occupational patterns" (American Institutes for Research & Quincy Public Schools, 1964, p. 10).

However suitable these may be as general goals, they do not qualify as satisfactory objectives by our criteria of the preceding section. This was recognized in the original proposal. In fact, one of the important purposes stated for the project is to demonstrate increased effectiveness of instruction when the content of that instruction is derived explicitly from the behavior desired of graduates. To satisfy this purpose, specific instructional objectives must be written. But what behavior is desired of graduates? What should the specific objectives be?

These questions pose the first problem faced in Project ABLE: to bridge the gap between the broad goals and the specific objectives. Parenthetically, it might be noted that this is an example of a fundamental problem in education. People can learn facts, principles, skills, concepts, attitudes, etc., but they cannot learn all of them. Education implies organized learning of some of them. The problem is to identify that set of objectives which best satisfies broadly-stated goals within the given practical operating limitations. We turn now to discussion of the process whereby specific objectives are being defined and selected in Project ABLE.

General Procedure

It is useful to note that the procedure used to "bridge the gap" between broad goals and specific objectives can be thought of as a procedure for defining the broad goals. We wish to produce a set of performance statements (objectives) which collectively denote what is meant by the goal, in our particular usage. What is meant by the goal is the capability of performing the kinds of tasks selected as objectives. The particular goal definition so derived may not satisfy everyone. Indeed, the experience of graduates of a curriculum based on a particular definition may convince even the authors that a change of objectives and, therefore, of the definition, is desirable or necessary. The tremendous advantages offered by the definition of broad goals in terms of specific objectives are:

1. it is possible to decide that the goal and not something else needs to be changed, and
2. it is possible to identify and make specific changes in response to specific needs.

One conceivable way to proceed from a general goal to a set of specific objectives, would be to enumerate all of the individual human performances which any one of a group of people could think of as illustrations of goal achievement, and then select those which formed the best set according to some criterion. The problems with such a procedure are serious. Thus, the list of performances prior to selection normally would be extremely long. There would be no systematic assurance that all major kinds of performance were included for consideration. Further, the selection process would be exceedingly complex since hundreds of specific performances would have to be compared and evaluated relative to one another.

Another procedure, and this is the one used in Project ABLE, starts by translating the general goal into a performance statement at the same level of generality. The question then is asked, "What capabilities must be assumed if a person is to satisfy this performance requirement?" The answer to the question provides one or more new statements which serve to specify further the original one. It is important that the second set of statements cover all of the capabilitites one wishes to include for consideration at that level of generality. The procedure then is repeated generating, for each second level statement, a set of statements which provides further specification. This process is continued until the statements produced are descriptions of task performances. These latter are the specific objectives we seek.

The principal advantages of this procedure are three. First, selection of objectives takes place at the most general level possible so that vast numbers of conceivable objectives are considered and eliminated implicitly rather than by the much more laborious explicit procedure. Secondly, it is possible to be complete at each level thus assuring that no important kind of performance is left unconsidered. Finally, the chain of statements provides an explicit rationale by which specific instructional objectives are related to the general goal. The procedure is simple in concept and effective in application. Its operation may be clarified by consideration of the following material describing its step-by-step application in Project ABLE.

Defining the General Goal

The general goals for the project, as stated in the beginning of this section of the discussion, were to:

1. develop individuals' talents so that they may achieve satisfaction in a life work or vocation,
2. develop responsible citizenship, and
3. make it possible for the individual to participate in and to share with others a variety of aesthetic experiences.

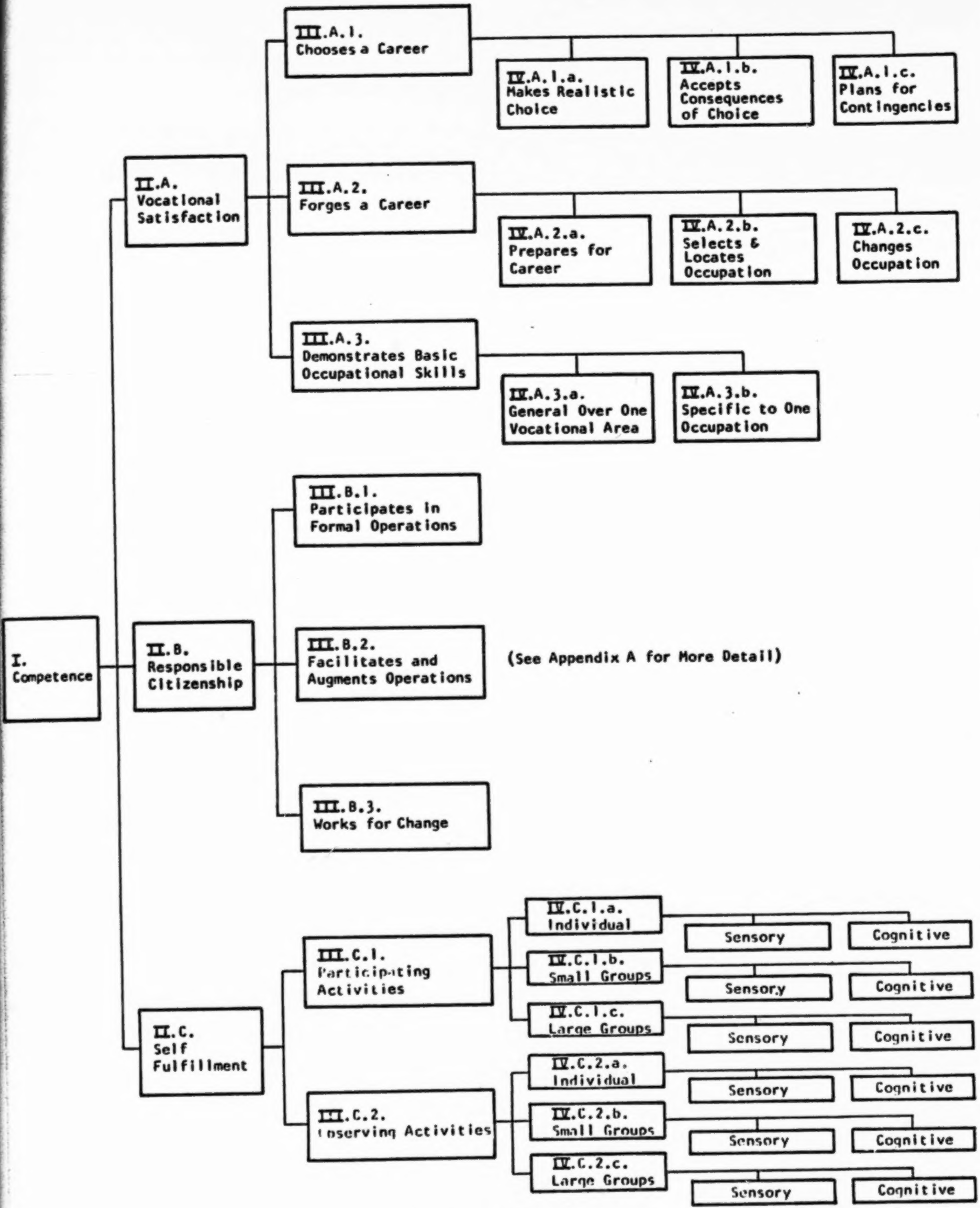
Together, these goals describe a general competence for dealing with life in modern society. A performance statement of the goals, at the same level of generality, is organized as follows:

> I The graduate can demonstrate the skills and knowledges which are judged essential to vocational satisfaction, responsible citizenship, and self-fulfillment, and which are specified below.

This statement clarifies the original general goals by establishing student performance as the matter of concern. It also explicitly substitutes proximate (to graduation) goals for remote goals. Although our "real" interest may be the student's performance in later life, we cannot wait that long to evaluate our product. We must have objectives which can serve as a basis for evaluation of present student learning and present curriculum. To be sure, a kind of leap is required to substitute proximate for remote goals. Long-term, systematic evaluation may reveal that satisfaction of the proximate goals does not unerringly result in satisfaction of the longer-range goals. If so, then the proximate goals can be adjusted. But the uncertainties of the leap do not relieve us of the responsibility for being clear and specific about what we are aiming for now.

Statement I indicates a logical structure to be filled out as the goal definition is developed. Figure 1 displays the part of the structure which will be discussed in this report.

Thus, the most general goal, "competence," is specified further in statement I, and shown in Figure 1, to include the skills and knowledges required for vocational satisfaction, responsible citizenship, and self-fulfillment. Each of these second-level goals implies several third-level


I. Competence
II.A. Vocational Satisfaction
III.A.1. Chooses a Career
IV.A.1.a. Makes Realistic Choice
IV.A.1.b. Accepts Consequences of Choice
IV.A.1.c. Plans for Contingencies
III.A.2. Forges a Career
IV.A.2.a. Prepares for Career
IV.A.2.b. Selects & Locates Occupation
IV.A.2.c. Changes Occupation
III.A.3. Demonstrates Basic Occupational Skills
IV.A.3.a. General Over One Vocational Area
IV.A.3.b. Specific to One Occupation
II.B. Responsible Citizenship
III.B.1. Participates in Formal Operations
III.B.2. Facilitates and Augments Operations
III.B.3. Works for Change
II.C. Self Fulfillment
III.C.1. Participating Activities
IV.C.1.a. Individual
Sensory
Cognitive
IV.C.1.b. Small Groups
Sensory
Cognitive
IV.C.1.c. Large Groups
Sensory
Cognitive
III.C.2. Observing Activities
IV.C.2.a. Individual
Sensory
Cognitive
IV.C.2.b. Small Groups
Sensory
Cognitive
IV.C.2.c. Large Groups
Sensory
Cognitive

(See Appendix A for More Detail)

FIGURE 1

PARTIAL STRUCTURE RELATING SPECIFIC OBJECTIVES TO GENERAL GOALS

goals, and so on. We turn now to consideration of each of the three major components of "competence."

Vocational Objectives

Vocational satisfaction certainly requires that the world of work be entered with some marketable skill. However, the pattern of skills and knowledges which is in demand can change locally, even nationally, in a relatively short period of time. Over a working lifetime, the pattern will almost certainly change repeatedly and individuals can expect to shift their specific occupations several times (cf. U. S. Department of Labor, 1965; Venn, 1964). Education for vocational satisfaction must find a way to produce graduates who can accommodate such changes in the demands of the market place.

The shift from one occupation to another, or the adjustment to a change in the requirements of an occupation, will be less difficult as the number of new skills and knowledges is smaller. That is, the person with least new learning to accomplish will make the required change most easily. The versatility we seek requires that students have capabilities which are generalizable in the sense of being useful in many occupations. One class of such capabilities which can be identified consists of those which are important to vocational success and satisfaction, but are not required for actual performance of the tasks which make up a particular job. If we accept the premise, indicated earlier, that choosing a career is not a one-time process, but rather is an ongoing process in which an individual must repeatedl review his aspirations and skills in view of current opportunitites, then many of the capabilities required to make effective career choices are highly generalizable; so, also, are many capabilities in such areas as interpersonal relations and work attitudes.

Some capabilities are less generally required than those of the previous paragraph, but are not restricted to a single job. Thus, knowledge about the nature of metals and the processes for working each kind of metal is generally required in the metal-working occupations. Similarly, knowledge of special symbology and terminology (e.g., electrical schematic drawings) is generalizable over many occupations. The curriculum must provide for learning of such generalizable capabilities.

It is useful to organize vocational skills and knowledges into three categories: those required to choose a career, those required to forge a career, and those required to perform satisfactorily in an occupation. This categorization is comprehensive of both general and specific occupational capabilities. It also recognizes the importance of capabilities related to vocational change. The performance statement of vocational goals at this level can be formulated as follows:

> II.A. The graduate can demonstrate the skills and knowledges required: to make an appropriate career choice, to forge a career, and to perform satisfactorily in an occupation.

By extending this analysis level-by-level, we become increasingly precise about the performance to be included in our meaning of vocational competence. For example, as shown in Figure 1, the "chooses-a-career" category subdivides into three. The progression from that point in the structure to specific objectives is illustrated by the following abbreviated list.

III.A.1.	Chooses a career
IV.A.1.a.	Makes a realistic choice
V.A.1.a.(1)	Evaluates the world of work
VI.A.1.a.(1) (a)	Identifies educational and achievement requirements for given vocational areas.

The next step is the statement of specific objectives meeting all of our criteria. Several categories exist at each level in the abbreviated list above so that a large number of specific objectives is generated. Each of them is related through the structure to the general goal with which the process began.

The progression following "demonstrates basic occupational skills" is of particular interest because it reflects major decisions as to the specific occupations for which preparation is to be offered. The progression is illustrated by the following abbreviated list:

III.A.3. Demonstrates basic occupational skills and knowledges.

  IV.A.3.a. Those general to occupations in one of the following vocational areas (11 areas listed).

  IV.A.3.b. Those specific to one occupation in the chosen vocational area (many occupations listed for each vocational area).

The next step in each case is a list of specific objectives which define the performance capabilities of the graduate in a particular vocational area and occupation. The eleven vocational areas chosen for training were specified in the original study proposal. The selection of occupations within each vocational area and the identification and description of specific task requirements for each occupation has been a major enterprise in project activities to date. The procedures used in this vocational analysis have been described in a previous report (American Institutes for Research, 1965).

Citizenship Objectives

Preparation of young people for responsible citizenship has been a matter of concern for some years. A number of important studies has been done to define citizenship objectives. Many educational programs have been established to develop good citizenship. A useful review of these studies and programs is provided by the American Association of School Administrators (1954). Most studies reported in the referenced volume arrived at lists of criteria for good citizenship by consensus of various groups of people. The criteria are stated in general terms. For example, consider the following list selected from four different studies:

> "An adequate understanding of, and wholehearted allegiance to, the democratic way of life."
>
> "Has a philosophy of life consistent with the values of democracy."
>
> "An appreciation of the rights, protections, duties, and responsibilities which political democracy ensures and exacts."
>
> "Believes in equality of opportunity for all people."

There is no criticism of these statements as general goals, but they cannot serve as objectives in our sense. Educational programs based on general statements such as these, without an explicit rationale relating the goals to what students are expected to be able to do, run the risk of not being able to evaluate the program's success in meeting the goals.

In Project ABLE, we are committed to a different approach. We wish to evaluate a curriculum for which the content is explicitly derived from the behavior desired after graduation. Thus, we begin our derivation of citizenship objectives by asking, "What is it that responsible citizens do?" This approach does not deny the relevance of "beliefs," "values," "appreciation," "respect" or other similar concepts. It does hold them to be characteristics which can be detected and evaluated only through their effects on behavior. If these inferred characteristics do have significance for the way in which citizens behave, then we should be able to define the kinds of behavior which identify a citizen having those characteristics. This may be a difficult task, but to claim the task impossible is to admit the inability to show that anything relevant has been learned at all (Mager, 1962). In Project ABLE, we are making the attempt to define citizenship goals in terms of specific performance objectives.

The analysis leading to specific citizenship objectives is of the same form as the analysis for vocational objectives. The logical structure for this portion of the definition is indicated at several levels in Figure 1. As before, the first requirement is that we provide a performance statement of the goal "responsible citizenship."

We begin by noting that societies are organized in order to identify problems and to solve them efficiently, and in order to accomplish goals which are not easily accomplished otherwise. Although the organization established varies from one societal group to another, the agents of society, in every case, are assigned certain obligations and prerogatives with respect to members of the society and to other societies. Each member is assigned certain obligations and prerogatives with respect to other members and to the society. It is the behavior of individuals as it relates to their obligations and prerogatives as members of society which is considered here to be citizenship behavior. Our procedure requires that we now define major categories of behavior available to the citizen.

Citizenship behaviors can be organized into three categories defined by the relations between the citizen and the organized society. Thus, as shown in Figure 1, the citizen may participate directly in the formal operations of society. He may act in ways which facilitate and/or augment the operation. He may monitor the operations of society and work for changes (in goals, functions, people, emphasis, or whatever) he considers desirable. The performance statement of citizenship objectives at this level of generality may be formulated as follows:

> II.B. The graduate can demonstrate the skills and knowledges required of citizens: to participate in the formal operations of society, to facilitate and augment the formal operations of society, and to work lawfully for changes considered desirable.

This categorization, though by no means the only one available, is comprehensive. That is, any citizenship behavior can be properly located in exactly one of these categories.

The progression from this level has not yet proceeded to detail as specific as that reached for vocational objectives. However, Appendix A presents additional detail for which there was not adequate room in Figure 1.

A major decision sequence in developing vocational objectives was presented by the need to limit the variety of vocational areas and occupations for which training would be developed. An analogous problem exists in developing citizenship objectives. Practical limitations require that we limit the curriculum to something less than all of the specific objectives which could be generated by the structure begun in Figure 1 and Appendix A. Some understanding of the problem of selection can be gained by noting that the structure as displayed is appropriate for any one of the several partially overlapping societies of which one individual is a citizen. Thus, he is a member of a family, a neighborhood, a local community, a state, a country, and a world. Each of these societies has laws (or rules), practices, agents, functions, and goals. An explicit enumeration of all possible specific citizenship objectives in even one of these societies would be impossible within the practical limitations of Project ABLE.

Our present plan for selection envisions a three-dimensional table. One dimension is a list of types of citizenship behaviors as begun in Appendix A. The second dimension is a list of societies to which the average citizen belongs. The third dimension is a list of important societal goals. Each cell of the three-dimensional table could, then, contain those kinds of behavior relevant to a particular goal in a particular societal organization. Thus, one cell might contain specific objectives related to petitioning the local government on a matter of public education. Another could contain specific objectives related to complying with Federal laws concerning public health. A third might contain objectives related to using systematic procedures in arriving at a solution to an international economic problem. Before actually enumerating these specific objectives, however, judgments would be rendered, with the counsel of the Advisory Panel, as to the relative priority of the various cells in the table (categories of objectives). Presumably, those categories which are considered likely to be encountered by the average citizen would be selected in preference to those considered to be unlikely experiences. This selection procedure could provide a manageable and coherent set of categories for which specific objectives then would be written.

Although the process of developing citizenship objectives has not yet been completed, it is clear that it will be possible to produce specific objectives which meet our criteria and which are related systematically to the general educational goal with which we began.

Self-Fulfillment Objectives

Vocational and citizenship objectives derive largely from demands imposed on the individual by outside forces. To a substantial degree, satisfaction of objectives in those areas represents a compromise between each individual's needs, abilities, and desires and the responsibilities and limitations thrust on him by the society of which he is a member. Fortunately, not all of one's time and energy is required for vocational satisfaction and responsible citizenship. In fact, the proportion of time required for earning a living has steadily decreased on the average during recent years and it appears likely that this trend will continue. With significant and increasing amounts of leisure available to the average citizen, it has become practical to consider educational programs designed to aid people in finding and developing satisfying leisure activities.

Compared with vocational and citizenship activities, leisure activities are selected and engaged in with relatively more freedom. The individual can exercise practically free choice over a very wide range of activities. Further, there is no essential restraint which limits an individual to a single choice or requires him to stay with a choice he has made. This freedom of individual choice, combined with the practically unlimited variety of activities from which an individual may choose, greatly complicates the problem of describing the domain of leisure activity and of selecting objectives for the educational program.

Before proximate goals are stated for self-fulfillment, two principles should be made explicit. The first of these is a rule for deciding which of the many possible leisure activities qualify as self-fulfilling. It is held that not all lawful activities are equally desirable as ways to use leisure. Rather, leisure activities are preferred which contribute to the acquisition, retention, or improvement of some skill or knowledge. Such activities are preferred because they increase the individual's opportunitites for satisfying experiences. Thus, learning to paint in water colors, to play golf, to distinguish between compositions of several composers, or to fly an airplane are desirable activities because they increase the number and variety of ways in which satisfaction may be found. Also, they are desirable because of the satisfaction which accrues from achievement and from exercise of a skill or application of knowledge. Activities which also facilitate additional learning are particularly desirable because they contribute to rapid expansion in the sources of satisfaction available to an individual. This principle for identifying desirable leisure activities assists in defining what is meant by self-fulfillment. Thus, in our usage, self-fulfillment refers to a process whereby the individual learns, rehearses, or improves skills and knowledges of his own choosing in a sequence and at a rate which provides him with maximum satisfaction.

The second principle which should be mentioned concerns the limits on aspirations for an educational program. It is that the program should introduce each student to a wide variety of desirable leisure activities and should provide an opportunity for each student to learn basic skills and knowledges required for at least two of these. This principle is based on the assumption that many students will have no other opportunity to explore a wide variety of such activities with informed assistance, and that such an opportunity is important to self-fulfillment. It should be noted that the second principle does not require that all possible activities be explored, only a variety. The intent is that the student sample many types of activity not just many activities of one type. It is important, then, that a classification system for activities be established and that specific activities be selected to represent each type.

One classification system now being considered has three dimensions: (1) participation-observation, (2) sensory-cognitive, and (3) individual-social. The first of these distinguishes between participant activities (e.g., playing tennis) and observing activities (e.g., watching a tennis match). The main distinction between the participating and the observing activities is the extent to which the central action is influenced by the person's activity. Thus, the participant creates the tennis game, but the observer is not essential to the game's progress. Similarly, painting a picture is distinguished from comparing pictures, and acting in a play is distinguished from attending a performance.

The second dimension distinguishes between activities which are dependent upon sensory-motor processes primarily and those dependent upon cognitive or intellectual processes primarily. It is recognized, of course, that most activities contain elements of both, but the distinction is useful to ensure complete and balanced coverage. There is little question that playing chess and solving mathematical puzzles, for example, illustrate the cognitive end of the dimension better than do, say, swimming and playing football.

The third dimension distinguishes between activities on the basis of the amount of interpersonal interaction involved. Thus, some activities (e.g., bird watching, writing a story) require only the individual. Some (e.g., playing bridge, barbershop singing) require a small number of others in addition to the individual. Some (e.g., watching a ball game, attending a concert) normally involve or require a large group of people. Of course, for some activities, the number of people may vary, but once again, the distinction between individual and social activities is useful.

The definition of self-fulfillment and the categorization of activities allow us to state self-fulfillment goals in performance terms appropriate to the graduate as follows:

> II.C. The graduate can demonstrate knowledge of at least one leisure activity in each of the twelve categories defined below and can demonstrate skills and knowledges required to engage in at least two activities which are categorized differently with respect to sensory-cognitive and with respect to individual-social components. Each category of leisure behavior is defined by a combination of three characteristics selected one from each of the following sets:
>
> Sensory or cognitive
> Individual or small group or large group
> Participation or observation

The next step is to select several activities within each category to constitute the curriculum offerings. Thus, for the individual-participating-sensory category, one might select a list like: swimming, golf, sculpture, instrumental music. The selection process must include consideration of available faculty skills and necessary facilities. Once the selection is made, specific objectives meeting all criteria may be prepared.

It should be noted that self-fulfillment activities are not necessarily unrelated to vocational and citizenship activities. Many activities which are means by which some people earn a living are desirable leisure activities for others. Familiar examples are: woodworking, instrumental music, sewing, sports, painting and sketching. Some activities useful for good citizenship are found in some leisure activities. For example, consider: public speaking, reading about or investigating historical or current issues, participating in group discussions. Final selection of leisure activities for the curriculum may well be made so as to employ available faculty skills and facilities in more than one aspect of the program. Perhaps, more important, teachers and counselors may be able to assist students in finding opportunities to capitalize on their skills and abilities by using them in several areas.

DEFINING GUIDANCE PROGRAM OBJECTIVES

The general goals of the new curriculum are three: vocational satisfaction, responsible citizenship, and self-fulfillment. Theoretically, a student could attain some degree of competence in each of these areas on his own by utilizing those things made available to him in the school curriculum and outside the school environment. He could progress through a curriculum of his choice which matches his interests and achievement, make appropriate decisions, implement these decisions, make necessary changes, and accomplish this in a manner which does not disrupt those surrounding him. Achievement of educational goals is sufficiently important for every student, however, that it is considered essential to provide him with any assistance, guidance, and direction he may need for success. The task of the guidance program is to provide these services.

The general objective of the guidance program may be stated as follows:

> Assists each student as necessary to ensure that he progresses toward realistic goals of vocational satisfaction, responsible citizenship, and self-fulfillment, while encouraging maximum student participation in decision-making.

The next question is, what must a guidance program do in order to accomplish this goal? The specific objectives of the guidance program differ from the specific instructional objectives in that guidance objectives describe the activities of people other than the student, primarily. However, all activities of these other people are intended to assist the student as he attempts to select goals and achieve them. The student is an active participant in the process of choosing goals to the extent that he is capable.

It is important to note that we refer here to functions and actions of a program, not to the activities of some special group of people. It is necessary first to identify the activities which are needed to satisfy the general objective of the guidance program. Then a decision can be made, with respect to each program activity, as to how best to provide that action, including who should provide it. Probably, some functions will be found to be handled best by guidance specialists. Many others may be handled best by teachers in daily contact with the student. For the present, however, this decision may be postponed. In this section we are concerned only with identifying the kinds of activity required to satisfy the general objective.

If the objective requires us to assist a student in selecting and achieving goals, then it is necessary to know his starting point. That is, it is essential at the time of assistance to describe the student with respect to relevant characteristics including achievement, ability, and interests. Examination of the student may indicate talents or deficiencies relevant to his educational progress. In this case, effective action may be selected with the student to develop the talent or remove the deficiency. Periodic assessment of each student permits realistic decision-making at important choice points in his educational and vocational career. These considerations are summarized in the following guidance objective:

A. Periodically evaluates each student with respect to characteristics important for selection and achievement of his goals.

The characteristics to be evaluated may be different for different students, and different for the same student at different stages in his educational process. Thus, a standardized arithmetic achievement test might apply to all children at a certain grade level, a particular shop test might be appropriate only for a student in one vocational area, and an individual intelligence test might be appropriate only for a student whose abilities are thought to have been overestimated or underestimated.

The educational, vocational, social and interpersonal needs of the student are expected to change as he is influenced by his in-school and outside-school environments. It becomes important to identify these needs, to assist the student in the formulation of objectives to meet them, and to help him keep his current objectives and longer-range goals consistent. To accomplish this, the program must have the following objective:

B. identifies the immediate and future goals of each student.

Realistic educational and vocational decision-making by an individual student requires information about the training and occupational opportunities available to him. Each student must know the options available to him within the new curriculum, the kinds of skills and knowledges he may learn in each course of study, the ways in which he will be expected to learn and perform within any selected course, and the highest goals possible of attainment in each program. The student should be prepared for his role in the new program, especially since plans are being developed which assign the student more responsibility for his own learning than he has had previously. Students may find this step to be a difficult one, having studied under very different conditions in prior school years. It is expected that teachers will spend more of their time working with one student at a time and in assisting students in the selection of next learning steps.

In the area of occupations, it is important that he identify, for example, the attractive and prohibitive elements of a variety of occupations and the entry level requirements for each. Such information is needed at different levels of specificity depending upon the student's stage of educational progress. For example, a junior high school student may need only to distinguish families of occupations and their corresponding entrance requirements. In senior high school, information about qualifications for specific occupations becomes important. These considerations require two objectives:

C. identifies and informs the student about the educational and vocational opportunities available to him,

D. identifies and informs the student about the conditions and requirements of each available opportunity

It is not sufficient that a program gather and enumerate items of informati about the student and the opportunities open to him. The critical next step is a realistic reconciliation of achievement and goals for individual students and their parents. The student should be assisted in selecting and progressing through a sequence of instruction which is consistent with the best current information on his abilities and interests, and his parents should be informed throughout. Sometimes, perhaps often, longer-range goals as well as immediate objectives may need to be adjusted in view of the student's changing interests and increased knowledge. For example, a student who has elected a non-college curriculum should be assisted in revising his educational program and his longer-range goals if he exhibits the necessary talents and expresses the desire to continue study beyond high school. Decision adjustments must be made as changes occur in the individual's goals or in the opportunitites which are available to him. Three guidance objectives are derived from these additional considerations:

E. with each student, analyzes the consistency among his goals, his capabilities and interests, and his educational and vocational opportunities;

F. with each student, selects realistic courses of action;

G. adjusts decision(s) as conditions change in the individual or in his opportunities.

Finally, it is essential to evaluate the program by observing in what manner, and to what degree the program operation contributes to desirable student outcomes, and to change the program to the extent that it either violates or does not meet program objectives. The design of the program also should be one that is feasible at the operational level, and carried out within practical limitations of time, cost and personnel. This brings us to the final guidance objective:

H. evaluates program effectiveness in terms of student outcomes.

These major objectives for the guidance program are listed below.

General Objective:

Assists each student as necessary to ensure that he progresses toward realistic goals of vocational satisfaction, responsible citizenship, and self-fulfillment, while encouraging maximum student participation in decision-making.

A. Periodically evaluates each student with respect to characteristics important for selection and achievement of his goals.

B. Identifies the immediate and future goals of each student.

C. Identifies and informs the student about the educational and vocational opportunities available to him.

D. Identifies and informs the student about the conditions and requirements of each available opportunity.

E. With each student, analyzes the consistency among his goals, his capabilities and interests, and his educational and vocational opportunities.

F. With each student, selects realistic courses of action.

G. Adjusts decision(s) as conditions change in the individual or in his opportunities.

H. Evaluates program effectiveness in terms of student outcomes.

These represent the most general level of analysis for guidance program behaviors. Objectives now are being developed at successively more specific levels for junior and senior high school programs. Procedures designed to measure the extent to which objectives are met, also are being devised.

REFERENCES

American Association of School Administrators. Educating for American citizenship. Thirty-second yearbook. Washington: National Education Association, 1954.

American Institutes for Research. Project ABLE: First quarterly technical report. Pittsburgh: Institute for Performance Technology, June, 1965.

American Institutes for Research & Quincy Public Schools. Development and evaluation of an experimental curriculum for the new Quincy (Mass.) vocational-technical school. Pittsburgh: Institute for Performance Technology, 1964. (P-1648)

Bloom, B. S. (Ed.) Englehart, M. D., Furst, E. J., Hill, W. H., & Krathwohl D. R. A taxonomy of educational objectives: Handbook I, Cognitive domain. New York: Longmans, Green & Co., 1956.

Commission on the Reorganization of Secondary Education. The cardinal principles of secondary education. Washington: Government Printing Office, 1918.

Dressel, P. L. (Ed.) Evaluation in general education. Dubuque, Iowa: Wm. C. Brown Co., 1954.

Education Policies Commission. The purposes of education in American democracy. Washington: American Council on Education, 1938.

Folley, J. D., Jr., Fairman, Jean B., & Jones, Edith M. A survey of the literature on prediction of Air Force personnel requirements. Wright-Patterson Air Force Base, Ohio: Wright Air Development Center, 1960. (WADD Technical Report 60-493)

Gagné, R. M. The acquisition of knowledge. Psychol. Rev., 1962, 69, 355-365.

Gagné, R. M. The implications of instructional objectives for learning. In C. M. Lindvall (Ed.), Defining educational objectives. Pittsburgh: University of Pittsburgh Press, 1964. Pp. 37-46.

Gagné, R. M. Conditions of learning. New York: Holt, Rinehart & Winston, 1965. (a)

Gagné, R. M. Educational objectives and human performance. In J. D. Krumboltz (Ed.), Learning and the educational process. Chicago: Rand McNally, 1965. Pp. 1-24. (b)

Gardner, J. W. National goals in education. In Goals for Americans. The Report of the President's Commission on National Goals. New York: Prentice-Hall, 1960. Pp. 81-100.

Krathwohl, D. R., Bloom, B. S., & Masia, B. B. A taxonomy of educational objectives: Handbook II, Affective domain. New York: David MacKay, 1964.

Lindvall, C. M. (Ed.) Defining educational objectives. Pittsburgh: University of Pittsburgh Press, 1964.

Mager, R. F. Preparing instructional objectives. Palo Alto, Calif.: Fearon, 1962.

Miller, R. B. Task description and analysis. In R. M. Gagné (Ed.), Psychological principles in system development. New York: Holt, Rinehart & Winston, 1962. Pp. 187-228.

National Education Association, Project on Instruction. Schools for the sixties. New York: McGraw-Hill, 1964.

Rockefeller Brothers Fund. The pursuit of excellence: Education and the future of America. Panel Report V of the Special Studies Project. New York: Doubleday, 1958.

Smith, R. G., Jr., The development of training objectives. Alexandria, Va.: The Georgia Washington University, Human Resources Research Office, 1964. (HumRRO Research Bulletin 11)

Tyler, R. W. Constructing achievement tests. Columbus: The Ohio State University, 1934.

Tyler, R. W. Achievement testing and curriculum construction. In E. G. Williamson (Ed.), Trends in student personnel work. Minneapolis: University of Minnesota Press, 1949. Pp. 391-407.

Tyler, R. W. Some persistent questions on the defining of objectives. In C. M. Lindvall (Ed.), Defining educational objectives. Pittsburgh: University of Pittsburgh Press, 1964. Pp. 77-83.

United States Department of Labor. A report on manpower requirements, resources, utilization, and training. Washington: U. S. Government Printing Office, 1965.

Venn, G. Man, education and work. Washington: American Council on Education, 1964.

PLANS FOR NEXT QUARTER

The following activities are planned for the quarter ending 31 December 1965:

1. The first selection and statement of objectives will be reviewed by the Advisory Panel.
2. Objectives will be revised, augmented, and organized into courses.
3. The derivation of objectives will begin.
4. Miscellaneous gaps in the vocational analysis will be filled.
5. Analysis of instructional requirements in mathematics and in social studies will continue.
6. Development of detailed plans for the junior high guidance program will begin.

APPENDIX A

EXAMPLE LOGICAL STRUCTURE FOR CITIZENSHIP OBJECTIVES

I. Participates in formal operations of society

  A. Pays taxes

  B. Contributes services required

    1. Juror
    2. Witness
    3. Military
    4. Report
    5. Assistance to societal agents

  C. Complies with laws restricting action

  D. Complies with customs

  E. Votes

  F. Petitions

  G. Runs for (holds) elective office

  H. Accepts appointive office

II. Facilitates and augments societal operations

  A. Provides economic support for family

  B. Provides essentials for development of family (physical, social, etc.)

  C. Makes decisions on societal issues on the basis of accumulated evidence and systematic reasoning

  D. Makes known his desires and opinions on appropriate issues to responsible agents

  E. Chooses actions to restore social controls in instances of disruption

III. Works to achieve orderly social changes

   A. Identifies needs, problems, defects

   B. Uses systematic and rational procedures to identify solutions

   C. Persuades others toward recognition of issues involving social change

   D. Defends own convictions by rational argument

   E. Joins with others in meetings, promotions, or representations to seek solutions and implement them

   F. Contributes time and/or money to organizations having goals considered socially desirable

   G. Formulates and executes plans to meet social needs

VT 001 641
High School Vocational Interest Survey in Canyon County. Special Bulletin.

Richman, Robert W.
Idaho Occupational Research Unit, Moscow

Pub Date - 66
MF AVAILABLE IN VT-ERIC SET. 15p.

*OCCUPATIONAL CHOICE, *HIGH SCHOOL STUDENTS, VOCATIONAL EDUCATION, POST SECONDARY EDUCATION, AREA VOCATIONAL SCHOOLS, FEASIBILITY STUDIES, *EDUCATIONAL INTEREST, SEX (CHARACTERISTICS),

Canyon County, Idaho,

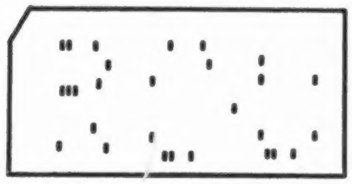
As a part of a feasibility study for an area vocational school, a questionnaire was administered to 3,029 students in grades 10, 11, and 12 to determine student choice of post-high school alternatives, planned choice of a career, and interest in enrolling in a vocational school in Canyon County. Taking further schooling was the alternative indicated by 68 percent of the boys and 70 percent of the girls. Interest in attending a local vocational school was indicated by 56 percent of the boys and 51 percent of the girls. Girls most often selected "secretary" or "beauty services" as their vocational choice, but showed interest in becoming bakers, cooks, dental assistants, medical technicians, and practical nurses. Boys most often selected "auto mechanics" and "forest technician," but were also interested in auto body and welding trades, engineer technicians, and electronics courses, and heavy machinery operation. A combination of responses showed that both sexes most often selected "business courses" and "forest technology." (EM)

VT 001 641

ED022065

High School Vocational Interest Survey In Canyon County

Robert W. Richman



The State Occupational Research Unit
College of Education
University of Idaho
Moscow

VT001641

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

HIGH SCHOOL VOCATIONAL INTEREST SURVEY IN CANYON COUNTY

Robert W. Richman

This Research Was Performed Under Contract Number
OE 5-85-118 With the United States
Department of Health, Education, and Welfare
Office of Education

SPECIAL BULLETIN

The State Occupational Research Unit
Kenneth M. Loudermilk, Director
College of Education
University of Idaho
Moscow, Idaho

High School Vocational Interest Survey
In Canyon County

Introduction

This is an informal report of a portion of a Feasibility Study for an Area Vocational School. That study was not performed as a formally structured package, but was a coordination of several sources of data. The present report describes the salient points of a questionnaire survey covering all high schools, public and private, in Canyon County. Arrangement was made with school officials to have all students except freshmen complete a short questionnaire. This was accomplished at each school in one day and no attempt was made to obtain data from those absent or who otherwise failed to complete the questionnaire. Interference and inconvenience to the school routines was thus kept to a minimum and school officials were most cooperative and helpful in all cases, for which we are appreciative.

Survey Coverage and Content

The survey represents a population of some 3200 upper class students. Data from 3029 students represents better than 94% response, and thus should be representative of students' opinion to the nearest full percent unit. Results were tallied separately for boys and girls and separately for each of the three grades represented, as well as in totals.

Results for each of the three basic questions are reported here, followed by projection of these data for interpretation purposes. Finally, selected information is given on specific vocational areas for which interest was most often checked. Again, this is expressed in projected data.

Post-School Alternatives

Students were asked to mark one of eight listed items to show which they felt was their most likely alternative after leaving high school. These items were the following:

1. Go directly to work
2. Enter military service
3. Attend trade school
4. Enter an apprenticeship
5. Attend a four-year college
6. Attend a church school
7. Attend business college
8. Other (explain)

The results indicate that 68% of the boys, numbering 1057, intended to take some sort of additional schooling. Likewise 70% of the girls, numbering 1028, desired to attend further schooling. The separation by grade is as shown below.

Table I-a

Boys' Stated Interest in Further Schooling

Grade	Number	% of class interviews
Sophomore	369	67%
Junior	399	72%
Senior	289	64%

Table I-b

Girls' Stated Interest in Further Schooling

Grade	Number	% of class interviews
Sophomore	389	75%
Junior	374	71%
Senior	265	62%

Planned Career

Students were asked to indicate their planned choice of career. Tabulations took note of apparent inconsistencies between career plan and post-school plan, such as indication of post-high school apprenticeship when career plan requires college degree. These inconsistencies may be more apparent than real, since many students indicated uncertainty as to whether it would be possible to implement their career preferences immediately. Roughly ten percent of the responses showed such seeming inconsistency.

Interest in Local Vocational Training

The third question asked was whether the students would enroll in a vocational school in Canyon County if one were established in the near future with courses in their field of interest.

The results showed that 56% of the boys, or 872, would be interested, and 51% of the girls, numbering 754, would do so. The detailed breakdown of results is given in Table II.

Table II-a

Boys' Stated Interest for Local Vocational Schooling

Grade	Number	% of class interviews
Sophomore	361	66%
Junior	272	49%
Senior	239	53%

Table II-b

Girls' Stated Interest for Local Vocational Schooling

Grade	Number	% of class interviews
Sophomore	325	62%
Junior	257	49%
Senior	172	40%

Interpretation Factors

A number of factors influence the meaningfulness of these raw data. One of the most important is the relative impermanence of career preferences of younger students in particular. This might be labeled as an uncertainty factor. Another factor is the change of intention due to obstacles beyond one's control, such as financial difficulty, etc. This may be labeled a contingency factor.

Numerous studies have evidenced these effects, although it is difficult to say what amount of effect they cause. Therefore in order to avoid overestimating and to obtain a more realistic judgment, uncertainty factors have arbitrarily been set at 40% for sophomores, 60% for juniors, and 80% for seniors. Likewise an arbitrary contingency factor of 50% was selected and applied after the uncertainty factor. The effect of these correction factors is that for every 100 sophomores who express a given interest, we will assume that due to uncertainty only 40 will retain that interest, and further that due to unforeseen contingencies only 20 will finally follow this early interest which they visualized initially. Similarly, for every 100 juniors with a given interest, we assume that uncertainty reduces this to 60, of which 30 will finally follow through. Furthermore, of every 100 seniors, 80 will retain the interest and 40 will actually succeed in continuing their plan.

Using the above arbitrary factors for the data given in Table II, we arrive at the results shown in Table III.

Table III

Projection of Data of Table II

(1)	Class (2)	Number Reporting (3)	Projected Class Total (4)	Number Vocational (5)	Projected Total Vocational (6)	After Corrections for Uncertainty (7)	After Corrections for Contingency (8)	% of Class (9)
Boys: 1552	Sophomore	548	580	361	384	154	77	13%
	Junior	554	590	272	289	174	87	15%
	Senior	450	480	239	254	202	101	21%
						average	88	19%
Girls: 1477	Sophomore	521	550	325	346	138	69	13%
	Junior	527	560	257	274	264	82	15%
	Senior	429	460	172	183	146	73	16%
						average	74	15%

Interpretation of Vocational Interest

By comparison of Tables I and II, we note that of those intending to take further schooling (most of whom, by the way, indicated a four-year college), the majority (78%) would also be interested in enrolling in a local vocational school if one were established. This suggests that such a school would provide an important service and in fact suggests that many of the students would be served better by a vocational-technical school than by a four-year school. Briefly, three-fourths of the high school students would like more schooling and three-fourths of these would choose vocational school if available. This is illustrated in Table IV.

Further study will indicate that the percentage drops with increased age. Calculation will show that 98% of the sophomore boys who wished more schooling would accept or prefer trade school. However, only 65% of the senior girls who want more schooling would take trade school courses. This is consistent with the greater certainty of plans of older students; it still shows, however, that vocational offerings are needed.

Furthermore, when we apply the arbitrary correction factors to this data, we find that 265 senior girls representing a 100 per cent sample of 282, corrects for uncertainty to 226, and corrects for contingencies to 113 girls who would enroll in further schooling. But from Table III we note that 73 would enroll in local vocational school, leaving only 40 who would select four-year school or possible business college or a distant vocational school. In a class of over 400, this represents 10% who really prefer distant advanced schooling.

The effect of these several comparisons is to show in summary that about one-tenth of the graduating high school students prefer to attend an academic college, that nearly two-thirds prefer vocational schooling and that after an arbitrary correction for various attrition factors, we can predict between 15 and 20 per cent of the class numbers are actually available for planning vocational school enrollments. In the present case this means that of the projected total (from Table III) of 940 seniors, at least 15% or about 150, would enroll in trade school. The probability is that many more than this, perhaps twice this many, would do so. Furthermore, in a second year of operation 15% of this year's 1150 juniors or at least 170 would enroll.

In terms of a feasibility study several other effects enter, among these being the interest of older out-of-school adults, the more favorable future orientation of students and their parents after a local vocational school is in fact in operation, the natural population growth of the community, the various changes in the emphasis of academic schools in the vicinity, who might not find it as necessary to accommodate certain vocational areas as heretofore, etc. Thus the above figures should be considered as extremely conservative.

Indication of Specific Course Interest

Just as with general interest in further schooling, it is impossible to obtain a firm figure for specific courses due to various factors. One of these is that in some schools a course such as typing is already offered and so was not indicated as a post-high school course by those students. Thus

Table IV

Comparison of Data of Tables I and II Showing Ratio of Interest in Vocational versus Academic Schooling

(1)	Class (2)	Number Wanting Further Schooling (3)	Percentage of Total Class (4)	Number Wanting Vocational Schooling (5)	Ratio (6)	Percentage Preferring Vocational (7)
Boys: 1552	Sophomore	369	67%	361	369/361	98%
	Junior	399	72%	272	399/272	68%
	Senior	289	64%	239	289/239	83%
	Subtotal	1057	68%	872	1057/872	82%
Girls: 1477	Sophomore	389	75%	325	389/325	84%
	Junior	374	71%	257	374/257	69%
	Senior	265	62%	172	265/172	65%
	Subtotal	1028	70%	754	1028/754	73%
	Totals	2085	69%	1626	2085/1626	78%

a lowered count in such a course does not indicate true lack of interest, but rather that such courses are available to some students. Again, this is one example of a course for which interest would increase after such vocational school offering had become an established fact.

The data on individual course interest have been taken through several steps of analysis. They have been totaled for related courses such as auto mechanic and diesel mechanic. These groupings reflect the fact that a student who indicates one choice usually indicates the other related field as an alternate choice, and in fact this is what occurs in practice in established schools. For more specific data, a more detailed list of the raw data will be appended following this report. (Tables VIII, IX.)

A second step of analysis is to distinguish first choice from first three choices totaled together. To do this, an extension of the uncertainty factor may also be used to prorate the three classes and render the data more realistic. Thus for sophomores we may give factors of 50% for first choice, 40% for second, and 30% for third. On an average, this arbitrary scheme still gives a 40% factor. Thus it provides the same distinction between the uncertainty of sophomore interests and those of juniors and of seniors, as was used for the general data. (Uncertainty factors for juniors would be 70, 60, 50 and for seniors 90, 80, 70.)

Another item of analysis was to include those courses which were chosen by too few boys (or girls) to be of sufficient weight, but which are subjects of career interest to both men and women. Such subjects, if available to co-educational classes, were sometimes of significant numbers to include and these appear in Table VII.

Tables V through VII include a numeral representing the average of first, second and third choices. This is followed by the figure resulting from an average correction of 60% for uncertainty and 50% for contingency. A figure is next given for first choice alone and again this is followed by an adjusted figure. Table V also includes the projected figures resulting from application of individual prorata corrections as discussed above.

Such detailed correction before averaging the three choices should give more accurate projection. It may be noted for the present data however, that with classes of nearly equal size the approximate correction in most instances is sufficiently similar to serve the purpose. For example, in the auto mechanics choices the corrected average was 27 for the three classes (or by division, 9 boys from the senior class) while the first choice taken alone indicated 36 for the three classes or a subdivision of 12 from the senior class. The more accurate, separately projected data by comparison shows a total of 25 for the three classes and 9 from the senior class. Also a first choice of 40 from the three classes shows 14 from the senior class.

In general we have noted that the approximate average for all three classes is only slightly high, and the approximate first choice is only slightly low. Thus we may use these approximations for predictive purposes and need not make the more detailed calculations for Tables VI and VII. As with the general interest data, the projection figures for specific courses are extremely conservative. Thus these figures should be interpreted as a definite and minimum number for planning purposes and we may probably plan for many more, say twice as many.

Table V

Vocational Course Choices Most Often Preferred by Boys

Vocational Field	Average Total Number		First Choice Subtotal		Projected Choices After Correction				
	Sum	Corrected	Sum	Corrected	Soph.	Junior	Senior	Total	First Choice Subtotal
Advertising *	53/3=18	5	20	6	1	2	2	5	7
Auto Mechanics	268/3=89	27	120	36	8	8	9	25	40
Mechanics Specialties(1)	243/3=81	24	55	16	6	7	9	22	18
Metal Work (2)	179/3=60	18	29	9	4	5	7	16	10
Business Courses*(3)	216/3=72	22	60	18	5	7	9	21	20
Engineer Technician (4)	153/3=51	15	74	22	5	6	4	15	24
Carpentry	50/3=17	5	9	3	2	2	1	5	2
Crop Technician	66/3=22	7	15	4	2	2	2	6	5
Electronics	121/3=40	12	58	17	4	4	4	12	19
Forest Technologist	273/3=91	27	115	34	9	8	7	24	36
Heavy Equipment Operator	129/3=43	13	29	9	3	3	5	11	11
Peace Officer *	89/3=30	9	29	9	3	3	3	9	10
Radio T.V. Repair	76/3=25	8	13	4	2	2	2	6	4

Table VI

Vocational Course Choices Most Often Preferred by Girls

Vocational Field	Average Total Number		First Choice Subtotal	
	Sum	Corrected	Sum	Corrected
Advertising *	63/3=21	6	25	8
Bakers and Cooks	118/3=40	12	40	12
Beauty Services	358/3=119	36	164	49
Business Courses*	333/3=111	33	87	26
Dental Assistant	209/3=70	21	42	13
Graphic Arts *	49/3=16	5	17	5
Home Economics	134/3=45	14	26	8
Medical Technician	122/3=41	12	55	16
Practical Nurse	150/3=50	15	51	15
Secretary	310/3=103	31	143	43

Table VII

Vocational Courses Often Selected by Both Sexes

Vocational Field	Average Total Number		First Choice Subtotal	
	Sum	Corrected	Sum	Corrected
Advertising	116/3=39	12	45	14
Business Courses	549/3=183	55	147	44
Forest Technology	298/3=100	30	118	35
Graphic Arts	74/3=25	8	23	7
Landscaping	70/3=23	7	9	3
Peace Officer	114/3=28	8	35	10
Photographer	75/3=25	8	14	4

Summary of High School Interest

Summarizing of data of course implies condensation into general tendencies. In the process of this, individual points of difference are de-emphasized. Thus several courses have been grouped in Table V. These groups, (identified in the tables by numbers in parentheses) are the following:

* Courses followed by asterisks are coeducational fields, included in Table VII.

(1) Mechanics Specialties include Auto service mechanic, Aviation mechanic, Diesel mechanic, and Farm mechanic.

(2) Metal Work here includes Auto body and Welding.

(3) Business Courses include Bookkeeping, IBM operator and Business methods.

(4) Engineer Technician includes the course of that title, and also Civil engineer technician.

The several groupings and averagings were arbitrary and chosen here with a view to the conditions and needs of most probable concern for our purposes. The needs and conditions of another area may suggest variations from the present data.

The findings of the present study may be gleaned from Tables I through VII. They indicate that about one in every ten students preferred to attend school away from his locality. In the main, this included those who wish a college degree.

In addition to the above ten percent, about two of every three (roughly 65 percent) stated preference for local vocational school. The remaining fourth of the students had non-school objectives, such as military service.

By application of an arbitrary correction (which approximates 40%) a prediction for planning purposes shows that at least 100 senior boys, and at least 75 senior girls would enroll in the local vocational school if it were established in 1967. Furthermore, a figure of this size would become available every year from high schools alone.

Specifically, about thirty boys would enroll in auto mechanics and at least twenty more in this or in other mechanics specialties if they were offered. Ten or more were interested in auto body and welding. Eighteen or twenty would enroll in engineer technician courses and more than a dozen in electronics areas. About a dozen would enroll for Heavy equipment operator, although these have such a course already available at Weiser, a fairly reasonable distance.

Girls' interests show that at least a dozen would enroll for training as Bakers or cooks, some forty in Beauty school, about twenty in Dental assistant courses, and a dozen for each of the areas Medical technician and Practical nurse. At least thirty would enroll for Secretarial training.

Both boys and girls would enroll for Advertising, and for Business courses, a dozen for the former and fifty for the latter. About thirty would enroll in Forest technology. Perhaps ten or more would enroll in each of the areas of Graphic arts, Landscaping, Peace officer and Photographer.

All the above are minimum figures, and do not include the interest of out-of-school adults or others, but only of present high school students. All figures would thus be enlarged by inclusion of other groups.

A final point in the application of this data refers to the effect of poor acquaintance with the vocation. Some of the course fields listed for student selection were no doubt strange to them, and in fact many fields may have an attraction for a student who does not really know what that field includes. To illustrate, if we asked first grade boys their preference, most of them perhaps would prefer to be firemen, their decision based on the knowledge that fire trucks are red and have a siren.

In short, we do not know what variance occurs in a high school interest survey due to unrealistic and temporary interest in a subject because of its prestige or romantic attraction. The effect is that some of the "standard" subjects will have a larger amount of "solid" interest than we have calculated, while some of the more exotic subjects would have less. Here it is possible that the figures for technologist and for electronics might be inflated. Possibly the figure for business is too low. Regardless of the specific figures, the statements of interest in individual subjects are sufficient basis for offering the course indicated.

Table VIII

Choices Reported Most Often by Boys
Original Data; N=1552

Vocational Field	Projected Total Number	First Choice Subtotal	Sophomore N=548				Junior N=554				Senior N=450			
			1	2	3	Class Subtotal	1	2	3	Class Subtotal	1	2	3	Class Subtotal
Advertising	53	20	7	8	4	19	6	4	5	15	7	6	3	16
Auto Mechanic	268	121	55	35	30	120	34	19	20	73	32	19	12	63
Auto Service Mech. (1)	55	8	2	7	10	19	2	6	8	16	4	8	5	17
Aviation Mechanic (1)	78	26	13	11	14	38	5	7	7	19	8	6	7	21
Body & Fender (2)	93	19	8	13	10	31	3	13	11	27	8	13	8	29
Bookkeeping (3)	54	20	6	4	7	17	10	5	7	22	4	5	4	13
IBM Operator * (3)	87	19	8	13	10	31	3	13	11	27	8	13	8	29
Business Methods * (3)	75	21	7	11	4	22	6	7	10	23	8	13	4	25
Civil Engineer Tech*(4)	59	26	13	7	10	30	9	5	1	15	4	1	7	12
Carpentry	50	9	5	15	4	24	4	8	6	18	0	3	4	7
Crop Technician	66	15	6	13	14	33	4	7	6	17	5	6	3	14
Diesel Mechanic (1)	74	13	6	12	9	27	5	8	8	21	2	8	12	22
Electronics	121	58	28	9	11	48	17	15	8	40	13	5	9	33
Engineer Technician (4)	94	48	17	13	11	41	19	8	5	32	12	2	4	18
Farm Mechanic (1)	32	8	3	5	3	11	4	6	2	12	1	4	3	8
Forest Technician	273	115	56	41	35	132	35	27	18	80	24	18	9	61
Graphic Arts	25	6	1	4	5	10	2	4	3	9	3	3	1	7
Heavy Equipment Operator	129	29	14	19	20	53	5	12	18	35	10	15	9	34
Landscaping *	45	4	0	4	8	12	3	9	6	18	1	2	10	13
Peace Officer *	89	29	11	12	15	38	11	8	13	32	7	5	7	19
Photographer *	37	6	1	7	8	16	4	5	4	13	1	3	4	8
Radio T.V. Repair	76	13	6	17	10	33	6	7	12	25	1	6	11	18
Welding (2)	86	10	2	12	12	26	5	5	18	28	3	10	14	27
Other	53	40	8	0	4	12	24	3	4	31	8	0	7	15

Table IX

Choices Reported Most Often by Girls

Original Data; N=1477

Vocational Field	Projected Total Number	First Choice Subtotal	Sophomore N=521				Junior N=527				Senior N=429			
			1	2	3	Class Subtotal	1	2	3	Class Subtotal	1	2	3	Class Subtotal
Advertising	63	25	12	10	7	29	5	10	5	20	8	1	5	14
Bakers-Cooks	118	40	32	20	23	75	6	7	15	28	2	7	6	15
Beauty Services	358	164	72	43	43	158	64	27	37	128	28	23	21	72
Bookkeeper (3)	105	17	3	20	16	39	6	18	17	41	8	10	7	25
IBM Operator (3)	170	62	14	20	9	43	28	34	17	79	20	17	11	48
Business Methods (3)	58	8	2	9	11	22	4	7	11	22	2	6	6	14
Dental Assistant	209	42	13	34	33	80	16	25	27	68	13	25	23	61
Forest Technician (5)	25	3	2	6	4	12	0	5	3	8	1	2	2	5
Graphic Arts *	49	17	5	5	6	16	8	9	5	22	4	4	3	11
Home Economics	134	26	12	28	20	60	12	15	19	46	2	9	17	28
Landscaping *	25	5	2	5	5	12	3	4	2	9	0	3	1	4
Medical Technician	132	55	22	14	11	47	11	17	8	36	22	18	9	49
Peace Officer *	25	6	1	3	7	11	2	1	3	6	3	3	2	8
Photographer *	38	8	4	7	9	20	2	3	5	10	2	3	3	8
Practical Nurse	150	51	26	25	23	74	10	10	18	38	15	14	9	38
Secretary	310	143	58	48	33	139	59	29	21	109	26	17	19	62
Other (e.g. stewardess)	81	40	13	5	8	26	15	5	14	34	12	4	5	21

VT 001 690
Essentials and Requirements of a Vocational Home Economics Program.

Illinois St Board of Voc Educ, Springfield. Voc Educ Div.
Ser-B-Bull-188.
Pub Date - Feb63
MF AVAILABLE IN VT-ERIC SET. 8p.

*OCCUPATIONAL HOME ECONOMICS, *PROGRAM DEVELOPMENT,

Specific requirements for a vocational home economics program in Illinois cover purpose, approval, reimbursement, organization of a day school program, space and equipment, home experience program, extended summer employment, teacher qualifications, Future Homemakers of America, inservice training, and organization and teacher qualification in the adult program. (MS)

VT 001 690

ED022065

Dr Lee

[illegible] 6 1965

Home Economics Education

Essentials and Requirements Of A Vocational Home Economics Program

SERIES B—BULLETIN NO. 188
FEBRUARY, 1963

STATE OF ILLINOIS
BOARD OF VOCATIONAL EDUCATION
VOCATIONAL EDUCATION DIVISION
SPRINGFIELD

VT 01690

STATE OF ILLINOIS
BOARD OF VOCATIONAL EDUCATION

MEMBERS

William Sylvester White, Chairman
Director of Registration and Education

Ray Page, Executive Officer
Superintendent of Public Instruction

Robert M. Schneider, Jr.
Director of Agriculture

Robert R. Donnelly
Director of Labor

Frances J. Gerty, M.D.
Director of Mental Health

Franklin D. Yoder, M.D.
Director of Public Health

George Barr, Chicago

Rilma Buckman, Ph.D., Chicago

Edward I. Elisberg, M.D., Highland Park

William Gellman, Ph.D., Chicago

Guy A. Renzaglia, Ph.D., Carbondale

William L. Rutherford, Peoria

EXECUTIVE AND ADMINISTRATIVE STAFF

VOCATIONAL EDUCATION DIVISION

Ray Page, Executive Officer
Superintendent of Public Instruction

J. E. Hill, Director
E. M. Claude, Assistant Director

SUPERVISORY STAFF
HOME ECONOMICS EDUCATION

Elsie Buchanan	Chief
Catherine A. Carter	Supervisor
Genevieve L. Crouse	Supervisor
Bertha E. Mathias	Supervisor
Lois M. Smith	Supervisor

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ESSENTIALS AND REQUIREMENTS
OF
A VOCATIONAL HOME ECONOMICS PROGRAM

Page

PURPOSE.. 1

APPROVAL....................................... 1

REIMBURSEMENT.................................. 1

DAY-SCHOOL PROGRAM

- Organization of Program....................... 1
- Space and Equipment........................... 2
- Home Experience Program....................... 3
- Extended Summer Employment.................... 3
- Teacher Qualifications........................ 3
- Future Homemakers............................. 4
- In-Service Training........................... 4

ADULT PROGRAM

- Organization.................................. 5
- Teacher Qualifications........................ 5

Bulletin No. 188 contains the same information as Bulletin No. 96. The new number was assigned when additional copies were duplicated.

PURPOSE

Vocational home economics education is designed to help individuals develop personally, improve family life through the management of human and material resources, and assume family and community responsibilities.

To achieve these objectives, courses should be planned to develop skills, understandings, knowledge, attitudes, and appreciations. Courses shall include major areas of home economics.

Instruction should meet present and anticipated future needs as far as possible. Rapid changes in the world necessitate the application of new developments in the physical, biological, social, and behavioral sciences.

APPROVAL

Any recognized public high school may be approved to organize a vocational home economics program provided the requirements of the State Plan are met. Such programs provide training for individuals over 14 years of age.

REIMBURSEMENT

Reimbursement for an approved vocational home economics program will be based on that fractional part of the school day which the approved teacher spends in teaching vocational home economics classes, plus a minimum of one period daily for counseling with pupils or visiting projects. The general policy is to reimburse a per cent of the salary of the teacher for the day-school program and the classes for out-of-school youth and adults. No definite per cent for reimbursement is guaranteed since the available state and federal funds depend upon appropriations which may vary from year to year.

DAY-SCHOOL PROGRAM

Organization of Program

The length of a course for any one year shall not be less than that required for a full unit of credit for other school subjects in the local school. The program shall comply with Plan I or II.

Plan I - There shall be a minimum of two years with 385 minutes of instruction per class per week, exclusive of passing time. Any single class period shall be a minimum of 40 minutes in length. Instruction in any one class during any one day shall be continuous. The teacher shall have a minimum of one 40-minute period daily for conferences with pupils or for home visitation.

Plan II - There shall be a minimum of two years with 275 minutes of instruction per class per week, exclusive of passing time, with no less than 40 minutes of instruction per day, plus one of the following: a third year of home economics (minimum of 275 minutes per week), an organized adult program, or extended summer employment. Instruction in any one class during any one day shall be continuous. The teacher shall have a minimum of one 40-minute period daily for conferences with pupils or for home visitation.

The total program shall include instruction in the following areas:

Selection, purchase, and consumption of goods and services for the home

Maintenance of satisfactory personal and family relationships

Care and guidance of children

Management of resources - time, energy, money, and equipment

Family housing and home furnishings

Safety and family health

Selection and provision of educational and recreational experiences for family members

Selection, preparation, serving, conservation, and storage of food for the family

Selection, care, and construction of clothing for the individual and the family

Scope and sequence of units should be carefully planned.

Each of the first two years shall include several areas of home economics with no area being over-emphasized to the neglect of others. Additional yearly courses shall include no less than two areas of home economics.

The State Supervisors of Home Economics Education will participate in an evaluation of the vocational home economics program and assist with suggestions for future direction. Changes shall be made in the program as evaluation indicates the need of change.

Space and Equipment

Space, equipment, teaching materials and supplies shall be provided for teaching the areas of home economics as outlined above. The rooms and furnishings should (1) stimulate interest in making homes livable, satisfying, convenient, and attractive, (2) provide standards attainable by pupils, (3) illustrate new developments in home equipment, and (4) facilitate the teaching of desirable, up-to-date practices.

The space and equipment shall be adequately maintained.

Home Experience Program

There shall be a directed home experience program with the home economics pupils doing home projects and the teacher visiting the projects. Visits should be made throughout the period the teacher is employed. It is recommended that new pupils be visited before school opens or within the first quarter of school. Early visits will aid the teacher in planning, with her pupils, class and home experiences needed for their development.

It shall be the responsibility of the local board of education to make provision for transportation of the teacher for home visitation.

Extended Summer Employment

Employment of teachers beyond the regular school year is strongly recommended when enrollment in day school and adult classes justifies it. Home projects and home visits shall be a part of the summer supervision program. The teacher may conduct adult classes and homemaking clinics, supervise FHA activities, participate in community projects, and give special help to individual families.

The length of time for extended summer employment depends upon a number of factors. Schools of low enrollment might conduct a satisfactory program in two weeks, while schools with a high enrollment might require four or more weeks. The usual practice is to hire the teacher two weeks preceding and two weeks following the regular school term.

Extended employment is reimbursable.

Teacher Qualifications

A vocational home economics teacher shall have (1) a valid certificate to teach in the secondary schools of Illinois, and (2) a statement indicating that she meets the requirements of the State Plan from the Chief of Home Economics, Board of Vocational Education. She shall have graduated from a four-year course in home economics from a college or university approved to train vocational home economics teachers.

She shall have completed a minimum of 120 semester hours including the following:

1. Areas of Home Economics	Minimum Semester Hours
Foods and Nutrition	8
Clothing and Textiles	8
The Home (housing, furnishings, equipment, management, home management house residence)	8
The Family (family relations, child development, family economics, family health)	8
Electives	6
Total	38

2. Related Subject Areas	Minimum Semester Hours
Art (fundamentals of art, plus art appreciation or applied art)	4
Natural Science (chemistry or household physics, plus an additional science course)	6
Social Science (related to family and community)	6
Electives	3
Total	19

3. Home Economics Education	Minimum Semester Hours
Education (curriculum, teaching methods including in-school and out-of-school groups, philosophy, and principles of vocational education)	5
Student Teaching (in an approved off-campus vocational home economics department)	5
Total	10

4. Additional Education to meet certification requirements to teach in secondary schools of Illinois.

A teacher, who is returning to teaching home economics after an absence of ten years, shall meet the above requirements. She shall take a refresher course in vocational home economics education. If she is not employed far enough in advance, she may be approved tentatively with a plan for meeting the requirements.

Home economics graduates from an institution which is not approved to train vocational home economics teachers may qualify by taking at least 17 semester or 25 quarter hours of home economics and home economics education at an approved institution. These shall include (1) those courses set forth in the State Plan for which she does not yet have credit, (2) other advanced courses needed to complete the 17 semester hours, including 5 hours of home economics education, and (3) any additional courses recommended by the institution to strengthen her subject matter background. The suggested plan worked out for an individual shall meet the approval of the Chief of Home Economics Education.

Future Homemakers

A chapter of the Future Homemakers of America should be a part of the total home economics education program. The purposes of the organization should be considered when planning chapter activities. Time should be allowed for supervising these activities.

In-Service Training

All teachers are requested to attend the annual conference called by the Chief of Home Economics Education.

ADULT PROGRAM

Organization

All courses shall be authorized by the local board of education and approved by the Chief of Home Economics Education.

The minimum class size shall be determined by the board of education.

Equipment shall be adequate for teaching the various areas of home economics.

Meetings shall be held in the school or other place most advantageous for conducting the program.

A class shall meet for 16 or more clock hours with a minimum of 8 sessions exclusive of organizational and social meetings.

Courses shall be in specific areas of home economics. They shall be based on the needs and concerns of the persons to be taught. The purpose of the program is to help adults develop skills, understanding, knowledge, attitudes, appreciations, and values for better home and family living.

Over a period of years, there shall be instruction in a variety of aspects of home economics.

Teacher Qualifications

A vocational home economics teacher who meets the requirements of the State Plan is eligible to teach adult classes. She shall have had some practical experience in working with adults in either formal or informal learning situations.

Persons from related fields may be approved if they meet the following requirements: (1) education in a specific profession or in a developed recognized skill, and (2) experience and skill in the phase to be taught. Persons who do not hold a valid certificate shall meet the State Certification requirements for part-time teachers of adult education.

VT 001 860
Real Estate Education and Research Needs in the San Fernando Valley.

Goeldner, Charles R. * and others
San Fernando Valley State Coll., Northridge.
Pub Date - Jun66
MF AVAILABLE IN VT-ERIC SET. 77p.

*REAL ESTATE OCCUPATIONS, ADULT VOCATIONAL EDUCATION, *RESEARCH NEEDS, *EDUCATIONAL NEEDS, INSERVICE EDUCATION, SURVEYS, RESEARCH, LAND USE, HOUSING, ANNOTATED BIBLIOGRAPHIES, CITY PLANNING, CURRICULUM,
California,

The purpose of this study was to determine the status and needs of real estate education in the region. Members of the San Fernando Board of Realtors responded to a questionnaire, and personnel of lending institutions, title companies, savings and loan associations, and others related to the real estate business were interviewed. Some of the conclusions were--(1) Real estate education is offered by junior colleges, university extension, state colleges, adult public schools, and private commercial schools, (2) Real estate education has been carried out in a well-organized fashion, (3) Management seminars are needed, (4) The greatest needs for research are in the area of apartment house and commercial property vacancy data, and (5) Information on freeway plans, zoning, population trends, rapid transit, and economic data is needed. The study lists real estate courses now being offered. The appendix includes a bibliography of real estate information and research studies pertaining to the region. (MM)

VT 001 860

ED022065

Real Estate Education and Research Needs

IN THE SAN FERNANDO VALLEY

BUREAU OF BUSINESS SERVICES AND RESEARCH
SCHOOL OF BUSINESS ADMINISTRATION AND ECONOMICS
SAN FERNANDO VALLEY STATE COLLEGE
18111 NORDHOFF STREET
NORTHRIDGE, CALIFORNIA

VT 01[illegible]

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

REAL ESTATE EDUCATION AND RESEARCH NEEDS IN THE SAN FERNANDO VALLEY

by

Charles R. Goeldner
Fadil H. Zuwaylif
Sol S. Buchalter

Bureau of Business Services and Research
School of Business Administration and Economics
San Fernando Valley State College
Northridge, California

June, 1966
Bureau of Business Services and Research
School of Business Administration and Economics
San Fernando Valley State College
Northridge, California

The study on which this report is based, and the report itself, were made possible by assistance through the State Division of Real Estate from the Real Estate Education, Research, and Recovery Fund as administered by the Real Estate Commissioner.

The opinions expressed in this study are those of the writers. They do not necessarily represent the views of the State of California, Division of Real Estate, or of San Fernando Valley State College.

ACKNOWLEDGMENTS

The writers express their grateful appreciation to the many people who contributed time and guidance in the preparation of this special report and to the California Division of Real Estate for the funds which have made this study possible.

Our special thanks go to Jerry Kraus, Executive Vice-President, San Fernando Valley Board of Realtors, and Ira Gribin, Gribin-Von Dyl and Associates, for their cooperation and assistance in conducting this study.

In addition, we are indebted to Miss Sharyl Enberg for tabulation, typing the report, and guiding the paper through the production process.

Finally, we express our gratitude to those members of the real estate industry who patiently answered questions and thereby provided all the basic information for this work.

PREFACE

This project is the first of a series of research studies to be conducted by San Fernando Valley State College and financed by the California Division of Real Estate through funds provided from the Real Estate Education, Research, and Recovery Fund.

The primary objective of this study was to determine the present status of real estate education and research in the San Fernando Valley and determine the requirements and needs of the industry relative to real estate education and research. Of prime importance throughout the study was the role that should be filled by San Fernando Valley State College.

The development of background information and data tabulated from questionnaires indicated that there were gaps in the current real estate education and research program in the Valley, and these could be filled by the local college.

Paul B. Blomgren, Dean
School of Business Administration and Economics
San Fernando Valley State College

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS i

PREFACE ii

PART I -- EDUCATION

Chapter

1 Real Estate Education in the San Fernando Valley . . 1

2 Education Recommendation and the Role of San Fernando Valley State College 17

PART II -- RESEARCH

3 Secondary Information Sources 20

4 Research Needs Study 26

5 Research Recommendations 29

APPENDIX

A Bibliography of Real Estate and Related Real Estate Research Studies on or Pertaining to the San Fernando Valley 32

B Questionnaire Used in the Study 44

C Responses to Question One: Indicate what you feel are the major real estate research needs for the Valley -- the areas or problems where research would benefit you 46

D Comments From the Research Needs Survey 60

PART I

EDUCATION

CHAPTER I

REAL ESTATE EDUCATION IN THE SAN FERNANDO VALLEY

The first step in the study was to collect background information on the local area to see what services were presently being provided the real estate industry in the area of education and research. It was found that real estate practitioners in the San Fernando Valley are fortunate to have one of the most comprehensive and well-developed real estate education programs available to them that can be found in the State of California.

Real estate education is carried out by five types of educational institutions in the Valley: (1) public junior colleges, (2) the University of California Extension, (3) San Fernando Valley State College, (4) adult public schools, and (5) private commercial schools. In addition to the courses and programs offered by these institutions, the CREA Educational Programs which are offered around the state are also open and available to San Fernando Valley realtors.

A certificate program designed primarily for the prospective or new real estate salesman is offered by both L. A. Pierce and L. A. Valley Colleges. In addition to the certificate program, the two junior colleges are authorized to award the degree of Associate in Arts with a major in real estate upon the successful completion of 60 units of a series of courses in real estate and other fields. L. A. Pierce College also provides educational programs in the escrow field at both the certificate and the Associate Degree in Arts levels.

The University of California Extension also offers a Certificate in Real Estate upon the successful completion of eight prescribed courses. A number of UCLA Extension courses in real estate are offered in Van Nuys and Burbank and are a part of their certificate program. In order to complete the certificate program, an individual may have to attend classes outside the San Fernando Valley (UCLA campus or downtown). In the fall of 1966, University Extension will implement an Advanced Certificate in Real Estate, which will require an additional eight courses.

At the present time there is no formal program in real estate at San Fernando Valley State College. The Department of Finance in the School of Business Administration and Economics currently offers two courses -- Principles and Practices of Real Estate and Real Estate Law. In addition, a third course in Real Estate Finance has been authorized for early implementation.

The adult public schools offer programs at two different levels. The first level program provides training for adults desiring to enter the real estate business while the next level program provides opportunities for real estate salesmen and brokers to improve their knowledge. Upon successful completion of either program, the student is awarded a certificate.

The prime concern of the private commercial schools is either to prepare an individual for the California Real Estate License Examination or to prepare a licensed salesman for the California Broker Examination; consequently, training in these private institutions is short, intensive, and concentrated. Having described the general nature of real estate education in the five major educational institutions, a detailed description of real estate training and education in each institution is discussed below.

Public Junior Colleges

There are two public junior colleges in the San Fernando Valley: Los Angeles Pierce College, 6201 Winnetka Avenue, Woodland Hills; and Los Angeles Valley College, 5800 Fulton Avenue, Van Nuys. Of the two colleges, Pierce College is the pioneer in real estate education and has been offering professional courses in real estate since 1956. It is also the largest educational institution in real estate in the San Fernando Valley and offers four different programs: Real Estate Certificate Program, Escrow Certificate Program, a program leading to an Associate of Arts Degree in Real Estate, and a program leading to an Associate of Arts Degree in Escrow.

The Real Estate Certificate Program, organized in cooperation with the San Fernando Valley Board of Realtors, Inc., is designed to provide professional educational opportunities for the real estate broker and salesman and to aid these individuals in raising the standards of their profession. During the academic year 1964-1965, Pierce College awarded over eighteen Real Estate Certificates, as compared to four Certificates awarded by Los Angeles Valley College during the same period. This program consists of 24 units of real estate and other related business subjects. The certificate requirements are as follows:

Group I -- Required Courses (12 units)

Real Estate Practices
Legal Aspects of Real Estate I
Real Estate Finance
Real Estate Appraisal

Group II -- Two Courses Required (6 units)

Real Estate Principles
Real Estate Appraisal II
Property Management
Escrow Principles
Escrow Practices
Legal Aspects of Real Estate II

Group III -- Balance of Requirements May Be Selected From Group II or the Following

- Real Estate Economics
- Introduction to Business
- Accounting
- Business Law
- Business English
- Business Mathematics
- Architectural Drawing
- Construction Estimating
- Residential Planning
- Engineering Drafting
- Economics
- Investments
- Insurance Principles
- Public Relations
- Speech
- Salesmanship
- Advertising
- Business Psychology
- Geology
- Blueprint Reading

Upon the successful completion of the following 2-year program, Pierce College confers the Associate of Arts Degree with a major in Real Estate:

First Semester

Course	Units
Introduction to Business	3
Business Law	3
Business English	3
Accounting I	3
Real Estate Principles	3

Second Semester

Real Estate Practices	3
Legal Aspects of Real Estate	3
Business Mathematics	3
Salesmanship	3
Speech	3
Tax Problems	1

Third Semester

Economics	3
Insurance Principles	3
Property Management	3
Real Estate Finance	3
Real Estate Appraisal	3
United States History	3

Fourth Semester

Escrow Principles	3
Public Relations	3
Geology	3
Political Science	3
Health Education	2
Typewriting	2

The Escrow Certificate Program, organized in cooperation with the San Fernando Valley Escrow Association, is designed to provide educational opportunities for escrow personnel and to aid escrow companies and escrow departments of banks, savings and loan associations, and real estate firms to raise and maintain standards of their profession. The program consists of 24 units in escrow and other related business subjects. The certificate requirements are as follows:

Group I -- Required Courses

Course	Units
Fundamentals of Escrow	3
Escrow Practices	2
Escrow Administration	3
Escrow Case Problems	2
Business Computations	3
Business Law	3

Group II -- 8 Units Required

Typewriting I	2
Typewriting II	2
Business English	3
Business Correspondence	3
Human Relations	3
Inland and Marine Insurance	3
Accounting I	4
Real Estate Finance	3

After completing the Escrow Certificate, one may work for the Associate of Arts Degree with a major in Escrow. This degree is awarded for 60 units of prescribed courses. All courses taken in the Certificate Program count toward the A. A. Degree; however, in addition to the Certificate in Escrow, the student must complete the following courses:

English	3 units
Speech	3 units
United States History	3 units
Government	3 units
Health Education	2 units

Suggested electives are:

Course	Units
Legal Aspects of Real Estate I	3
Legal Aspects of Real Estate II	3
Psychology	3
Public Relations	3
Introduction to Business	3
Industrial Supervision	3
Organization and Management Theory	3
Economics	3
Fine Arts	3

The number of classes offered, the enrollment during 1965-1966 and course descriptions give a good indication of the scope of Pierce College's real estate education program and some insight into its content.

Fall, 1965

Course	Sections	Enrollment
Real Estate Principles	2	66
Real Estate Practices	2	81
Legal Aspects of Real Estate I	2	95
Real Estate Finance	1	39
Real Estate Appraisal I	1	41
Property Management	1	44
Fundamentals of Escrow	1	42
Escrow Practices	1	17
Escrow Administration	1	36
Escrow Case Problems	1	4

Spring, 1966

Course	Sections	Enrollment
Real Estate Principles	2	89
Real Estate Practices	2	61
Legal Aspects of Real Estate I	2	56
Real Estate Finance	1	45
Real Estate Appraisal I	1	45
Real Estate Appraisal II	1	24
Property Management	1	25
Fundamentals of Escrow	2	71
Escrow Practices	1	18
Escrow Administration	1	19
Escrow Case Problems	1	11

Description of courses in real estate:

1. Real Estate Economics -- This is an introduction to real estate in California, including patterns of land usage, urbanization and economic development, factors causing the appreciation of real estate values, and local-regional resources in relation to the entire state.

2. Legal Aspects of Real Estate I -- This course covers principles of property ownership and management in their business aspects with special reference to the law of California as it applies to community property, conveyances, deeds, mortgages, leases, brokerage, mechanics, liens, homesteads, wills and estates, and taxes.

3. Legal Aspects of Real Estate II -- This course covers legal aspects of real estate problems; an advanced study of agency contracts; commissions; an introduction to tax problems in residential and commercial property; advanced problems in security instruments; types of ownership; insurance; subdivisions and zoning; condemnation; construction liens; landlord-tenant; and an introduction to related agencies and activities including loans, mineral, oil and gas, administrative procedures, and judicial review

4. Real Estate Practices -- This course covers the problems of establishing and conducting a real estate business. Among the major topics considered are establishing the office, securing listings and prospects, showing properties and closing sales, financing, property management, rentals and leases, appraising, and a survey of the California Real Estate Act.

5. Real Estate Finance -- This is a study of the forms and sources of financing property, construction, and permanent financing. Topics covered will include the procedures for F.H.A., Cal. Vet., and V. A. financing; mortgage capital from savings and loan associations,

commercial banks, insurance companies, and other sources; junior mortgages; appraising for mortgages; loan ratios; and leaseholds.

6. Real Estate Appraisal I -- This course is designed to assist those presently employed in the real estate field and also those who plan to work in the real estate business in the future. The course covers valuation principles; the three approaches of value -- cost, comparative, and income; architecture styles and types of construction; lot valuation; depreciation; and other related subjects. Emphasis is placed on appraisal methods for single family residences.

7. Real Estate Appraisal II -- This course is a continuation and extension of uses of appraisals studied in the beginning course. The course is designed to assist the student planning to enter real estate practice or those presently engaged as real estate brokers or salesmen. The topics covered are methods of appraising income properties, operating expenses, methods of capitalization, depreciation, gross multipliers, and related subjects. Particular emphasis is placed on apartment houses.

8. Property Management -- This course is planned for real estate brokers and salesmen and owners of income-producing properties. The following topics are covered: nature and type of property management, organization for management, leases and contracts, rent scheduling, selling of space and techniques of renting, tenant selection and supervision, relations with owners and budgets, purchasing and accounts, reports, ethics, and legal and professional relationships.

9. Principles of Real Estate -- This beginning course introduces the student to real estate fundamentals and principles. Among the major topics considered are real estate economics, terminology and definitions, real estate law, building and construction, real estate investment, and vocational opportunities in real estate.

Description of courses in escrow:

1. Fundamentals of Escrow -- An introduction to methods of handling escrows. Various forms used in escrow offices are also studied.

2. Escrow Practices -- A detailed study of the preparation of forms and documents. Consideration is given to the duties of the escrow officer's assistant.

3. Escrow Administration -- An advanced study of the principles and methods of handling escrows, including the buyer and seller forms and closing statements.

4. Escrow Case Problems -- A detailed study of difficult and unusual types of escrows. Evaluation and discussion of actual cases.

Los Angeles Valley College offers two programs in real estate: a Real Estate Certificate Program and a program leading to an Associate of Arts Degree with a major in Real Estate. These two programs are similar to those offered by Pierce College. An indication of the extent of these programs, the various courses offered, and their enrollment in 1965-1966 are listed below.

Fall, 1965

	Sections	Enrollment
Real Estate Principles	3	133
Real Estate Practices	2	98
Legal Aspects of Real Estate I	3	149
Real Estate Finance	1	53
Real Estate Appraisal I	1	54
Real Estate Economics	1	54

Spring, 1966

Real Estate Principles	3	119
Real Estate Practices	2	91
Legal Aspects of Real Estate I	3	153
Real Estate Finance	1	54
Real Estate Appraisal I	1	35
Property Management	1	48

University of California Extension

The University of California Extension offers various credit and non-credit courses in the field of real estate and awards a Certificate in Real Estate upon the successful completion of eight credit courses. Although it offers the widest range of courses in real estate education, not all such courses are available in the San Fernando Valley. Therefore, a candidate for the Certificate in Real Estate may have to take some courses in the Extension Downtown Center or UCLA Campus.

Required Courses for the Certificate are:

Trends and Factors Influencing Real Estate X481.1
Real Estate Practice X481.2
Legal Aspects of Real Estate X481.3
Real Estate Finance X481.4
Intermediate Real Estate Appraisal (Appraisal II) X481.5

Electives are:

Advanced Real Estate Appraisal X482.1
Property Management X482.2
Commercial and Investment Properties X482.3
Essentials of Residential Design and Structure X482.4
Real Estate Exchanges and Taxation X482.5
Marketing of Commercial and Investment Properties X482.6
Commercial Law of Real Estate Transactions X482.7
(Formerly: Advanced Legal Aspects of Real Estate X482.7)
Income Tax Factors of Real Estate Investment X483.1
Brokerage Administration and Procedures X483.2
Real Estate Appraising for Investment Purposes X483.4
Advanced Real Estate Exchanges and Taxation X483.5
Advanced Real Estate Appraisal -- Rural X483.6
Principles of Industrial Real Estate X483.8
Real Estate Investment Analysis X483.9
Principles of Residential Appraisal 880.5 (non-credit)
Advanced Real Estate Finance 881.4 (certificate credit only)
Tax Planning for the Construction Industry 881.6 (certificate credit only)
Mathematics for the Real Estate Industry 884.0 (certificate credit only)

Lecture Series:

Commercial and Investment Properties X482.3 (3 units)
Condominiums -- Planning -- Developing -- Marketing (non-credit)
Continuing Family Security Through Investment Planning (non-credit)

Creating Residential Income Property (non-credit)
Estate Planning, Building, and Preservation (non-credit)
Methods of Creating Financing for Real Estate Projects (non-credit)
Real Estate Investment Essentials (non-credit)
Real Estate Investment Planning (non-credit)
Real Estate Investment Building (non-credit)
Rezoning Methods and Procedures (non-credit)
Successful Acquisition and Operation of Apartment Buildings (non-credit)
Syndicate Financing -- Investment Analysis -- Project Coordination (non-credit)

Courses offered in the San Fernando Valley (Van Nuys) during 1965-1966 are:

Fall, 1965

Course	Units	Enrollment
Intermediate Real Estate Appraisal II X481.5	3	43
Advanced Real Estate Appraisal X482.1	3	26
Commercial and Investment Properties X482.3	2	18
Real Estate Exchange and Taxation X482.5	2	40

Spring, 1966

Course	Units	Enrollment
Intermediate Real Estate Appraisal II X481.5	3	15
Advanced Real Estate Appraisal X482.1	3	31
Real Estate Exchange and Taxation X482.5	2	30

In the fall of 1966 a new program will be implemented leading to an Advanced Certificate in Real Estate. The scope and content of this program will be announced by University Extension at that time.

San Fernando Valley State College

Although San Fernando Valley State College is the major educational institution in the San Fernando Valley, it plays a minor role in real estate education at the present time. The Department of Finance, Real Estate, and Insurance in the School of Business offers no formal program in real estate; however, it does offer two courses in the real estate field: Principles of Real Estate and Law of Real Estate. Course offerings and enrollment during 1965-1966 are:

Fall, 1965

Course	Sections	Enrollment
Principles of Real Estate	2	65
Law of Real Estate	1	27

Spring, 1966

Course	Sections	Enrollment
Principles of Real Estate	2	61
Law of Real Estate	1	21

Adult Schools

The Adult Education Branch of the Los Angeles City Schools offers two real estate certificate programs in the San Fernando Valley. Each program consists of a group of classes organized in cooperation with an advisory committee composed of leaders in the real estate field and teachers in the real estate program. These classes are conducted at the following adult night schools:

1. North Hollywood Adult School
5231 Colfax Avenue
North Hollywood

2. Reseda Adult School
18230 Kittridge Street
Reseda

3. San Fernando Adult School
11133 O'Melveney Avenue
San Fernando

4. Van Nuys Adult School
6535 Cedros Avenue
Van Nuys

The objective of adult school education in real estate is twofold: (1) to provide training for adults who would like to enter the real estate business, and (2) to provide opportunities for real estate salesmen and brokers to improve their competency on the job. The two different certificates which can be earned are: The Real Estate Certificate which is the original certificate and is designed primarily for prospective or new real estate salesmen and the Advanced Real Estate Certificate for those who complete the original certificate and desire further study.

Real Estate Certificate Requirements:

1. A minimum of five courses and 220 course hours (an additional course is required when the total hours of instruction in the five

courses does not total 220 hours).

2. Required Courses:

Real Estate Law I
Real Estate Appraisal I
Real Estate Sales
Real Estate Finance

3. One Course is Required From the Following Group:

Property Management
Apartment House Law and Management
Business Law
Sales Psychology
Sales Speech
Public Speaking
Bookkeeping

Advanced Real Estate Certificate Requirements:

1. A minimum of five courses and 220 course hours (an additional course is required when the total hours of instruction in the five courses does not total 220 hours).

2. Required Courses:

Real Estate Law II
Real Estate Appraisal II
Real Estate Practices
Escrow Practices

3. One Course is Required From the Following Group:

Property Management
Apartment House Law and Management
Business Law
Sales Psychology
Sales Speech
Public Speaking
Bookkeeping

Classes and Enrollment, 1965-1966:

As an indication of the size of the program conducted by the adult schools, the class offerings and enrollment during the year 1965-1966 are:

Fall, 1965

Course	Location	Sections	Enrollment
Real Estate Law	North Hollywood	3	n/a
	Reseda	2	110
	San Fernando	2	65
	Van Nuys	1	15
Real Estate Appraisal	Reseda	1	23
	Van Nuys	1	24
Property Management	Van Nuys	1	25
Escrow Practices	San Fernando	1	40

Spring, 1966

Course	Location	Sections	Enrollment
Real Estate Law	North Hollywood	3	n/a
	Reseda	1	52
	San Fernando	2	30
	Van Nuys	1	46
Real Estate Appraisal	Van Nuys	1	16
Real Estate Sales	Van Nuys	1	16
Property Management	Van Nuys	1	38

Private Commercial Schools

The following four private commercial schools in the San Fernando Valley offer training in real estate:

1. Anthony School
   11450 Ventura Boulevard
   North Hollywood

2. Anthony School
   18040 Sherman Way
   Reseda

3. John Carey Real Estate School
   5352 Laurel Canyon
   North Hollywood

4. Lumbleau Real Estate School
   7437 Van Nuys Boulevard
   Van Nuys

All private commercial schools offer two principal programs: a Sales License Preparation Course and a Broker's License Course. The Anthony School in North Hollywood also offers some additional courses for licensed real estate salesmen and brokers.

The Sales License Course, common to all commercial schools, is designed to prepare an individual for a Real Estate Sales License Examination. It covers laws pertaining to real estate business, property, contracts, titles, trust deeds, mortgages, liens, assessments, taxes, zoning, community property, title insurance, and escrow procedures. This course consists of six to eight weekly, three-hour lectures. With each lecture the student receives a complete set of material and a written quiz. When he has completed all the lectures, he is given a comprehensive written examination which is similar to the examination given by the State Division of Real Estate. After this examination the student attends an examination correction and discussion seminar. If he does not pass the first examination, he is given additional examinations and seminars. As soon as he receives a passing grade on the school examinations, he is considered ready for the State Sales License Examination.

The Broker's License Preparation Course is designed to prepare a qualified real estate salesman for the Broker's License Examination given by the State Division of Real Estate. To qualify for this examination, the candidate must be a licensed real estate salesman, have a minimum of two years of full-time practice in real estate, and have completed two college courses (three credit units in real estate law and three credit units in real estate practice). The Broker's Course consists of a series of about eight weekly, three-hour lectures. It covers the same topics as the Sales Course, but in greater depth. A comprehensive examination, similar to the state examination for a Broker's License, is given at the end of these lectures.

The Anthony School of North Hollywood offers a short course consisting of five weekly lectures in sales training. This course is designed for improving the sales ability of a licensed salesman or broker and is a case study of sales techniques. The course covers every phase of a real estate transaction, how to obtain a listing, how to overcome sellers' objections to listings, how to handle a buyer, how to obtain an offer, a counter offer, how to close a sale, and how to put a sale through escrow.

The Anthony School of North Hollywood also offers a special course consisting of six weekly lectures in Real Estate Exchange. This course covers specialized aspects of real estate exchange such as taxes, depreciation, and contracts.

CHAPTER 2

EDUCATION RECOMMENDATION AND THE ROLE OF SAN FERNANDO VALLEY STATE COLLEGE

Having reviewed the functions and responsibilities assumed by the various educational institutions in the field of real estate, the authors believe that real estate education and training in the San Fernando Valley have been carried out in a well-organized and highly exemplary fashion. However, a few remarks are in order.

First, it was revealed that the junior colleges, University of California Extension, and the adult public schools all offer a certificate program or courses leading to a Certificate in Real Estate. Since this area is so well covered, it is recommended that the San Fernando Valley State College not develop a certificate program in real estate as it would simply duplicate existing programs.

Second, San Fernando Valley State College is the only four-year institution of higher education in this geographical area. The college was established on the assumption that any vocational or professional program must have at its heart a liberal education core upon which the specialized areas could build strong programs. There are multiple avenues for the development of technical competence in the real estate field available at a wide variety of levels. Since those entering or already involved in the real estate field can find the specific technical courses they desire for the development of immediate technical skills, it is recommended that San Fernando Valley State College take advantage of this opportunity to develop a professional educational program in real estate which would lead to an educational level not made available by the other excellent educational programs offered in the community. With this assumption in mind it is recommended that the San Fernando Valley State College develop a program with the following features:

1. A basic general and liberal education program which is at present an all-college requirement reflecting the college philosophy.

2. A comprehensive business and economics core which is designed to assure that the business school graduate will be prepared to utilize the basic tools of analysis and be familiar with functional areas of business so that he can deal effectively with the dynamics of economic activity in our society.

3. A comparatively small cluster of high level, professionally oriented courses in finance, law, and real estate which will provide a sound foundation for those college students who wish to pursue professional careers in real estate.

As previously noted, three courses have already been authorized. These are Principles and Practices in Real Estate, Real Estate Law, and Real Estate Finance. At the present time a fourth course in Real Estate Appraisal and Investment is under development. In addition, the college offers a number of other courses in related academic disciplines which can be taken for elective credit by those interested in real estate as a profession. These afford the opportunity to broaden and enrich the serious student's potential.

It is felt that this type of program is needed in the area, will not duplicate existing programs, and will best serve the real estate profession in the San Fernando Valley.

A third and final recommendation concerns workshops and special programs. The study revealed that these educational needs were not being filled by existing educational institutions. Management seminars seem to be particularly needed. It is recommended that the Bureau of of Business Services and Research at San Fernando Valley State College, in cooperation with its Real Estate Advisory Committee and the San Fernando Valley Board of Realtors, work together to develop programs to bridge this gap.

PART II

RESEARCH

CHAPTER 3

SECONDARY INFORMATION SOURCES

Any meaningful study must begin with a review of the previous work in the field in order to avoid duplication of effort and to permit new analysis or research to start from the structure that has been developed. Since no current compilation of real estate research in the San Fernando Valley existed, the first task was to compile a selected and annotated bibliography to serve as an introduction to the literature on real estate research in the Valley.

The researchers consulted many sources and visited such agencies as the City Planning Commission, the County Regional Planning Commission, the Residential Research Committee of Southern California, as well as lending firms and local realtors.

An attempt was made to make the bibliography as comprehensive as possible; and it should be of value in a number of ways. Real Estate practitioners should find it a useful guide to the contents of the numerous sources listed therein. Beginning researchers may well find the bibliography almost indispensable not only in helping them to determine what information is available but also where to find it.

The complete bibliography will be found in Appendix A; however, several sources deserve special mention because they can be of significant value to realtors in the San Fernando Valley. These are:

1. The County Regional Planning Commission. Of special interest to real estate licensees is the County's area planning program. The

County Regional Planning Commission has broken Los Angeles County down into ten study areas, one of which is the San Fernando Valley. The purpose of the area studies' program was to encourage a well-balanced, orderly pattern of development throughout the county and to achieve greater inter-jurisdictional cooperation in solving mutual and area-wide planning problems. The objectives of the studies are: (1) to provide area-wide planning information to be used for common reference by separate jurisdictions in coordinating planning matters of mutual and area-wide concern, (2) to propose basic policies and patterns of land use to guide and encourage the orderly development of residential, commercial, and industrial areas, (3) to suggest guides for the provision of adequate public facilities in suitable locations, (4) to help bring about an efficient and convenient system of transportation routes and facilities through anticipation of the future demands for housing, commerce, and industry, as these will affect the system, (5) to help minimize problems which may arise in the transition from low density to a more intensified pattern of development, and (6) to conserve inherent scenic qualities and amenities. These reports contain information on the setting, physical environment, history, people, the economy, land use, services and facilities; population projections to 1980; and a recommended plan of development.

The area study on the San Fernando Valley is now in progress and is scheduled for completion some time next year. As a part of this study, an opinion survey was conducted between October 1 and November 15, 1965, among a sample of 2,000 households in the San Fernando Valley. The questionnaire covered such aspects as mobility, housing characteristics and preferences, community facilities, transportation, shopping characteristics, recreation preferences, employment information, and income. In addition to their area studies program, the county also conducts a number of land use studies which contain information of interest to realtors. Their Population Research Section publishes a quarterly bulletin entitled, "Population and Dwelling Units," which realtors will find of great assistance in keeping up with information on population trends. For further information on the San Fernando Valley area study or other studies and publications, contact the Los Angeles County Regional Planning Commission, 320 West Temple Street, Los Angeles 12, California.

2. City Planning Commission. The City of Los Angeles Planning Department's planning reports are another valuable source of information. They are available for those communities in the San Fernando Valley which are a part of the City of Los Angeles. A typical report contains base maps, land use information, a compilation of socio-economic data, historical information, zoning information, and recommended land uses. These are comprehensive studies that are frequently updated and are a part of the over-all San Fernando Valley Planning Report.

Another source of information is the Statistical Profile, City of Los Angeles. This is a computer printout of population and housing characteristics with land use acreages by census tracts for the entire City of Los Angeles. Volume 1 consists of 179 pages and contains information on the San Fernando Valley.

An additional study of interest is their Inventory of Industrially Zoned Land. This gives a listing of each parcel of industrially zoned land in the City of Los Angeles by census tract, site address, and geographic area. Listings give zones, use, size of parcel and data on size, and number of floors for industrial and commercial buildings.

A semi-annual publication contains a population estimate and housing inventory for the City of Los Angeles.

Reference copies of the above items and information on other studies are available from the Los Angeles City Planning Department, Room 361, City Hall, Los Angeles 12, California.

3. UCLA. The University of California at Los Angeles has maintained comprehensive programs of research and education in real estate for well over a decade. In 1951 UCLA initiated a program of research in Real Estate and Urban Land Economics which has achieved national recognition. Funds were also allocated to establish and maintain extensive collections of documents at UCLA and to provide the services such as secretarial, assistants, equipment, and supplies required by any research organization. San Fernando Valley real estate practitioners and researchers are fortunate to have this center and its extensive collection located in such close proximity to them. Three studies of the Real Estate Research Program at UCLA merit special mention, because they are concerned directly, or in part, with the San Fernando Valley. They are: Ventura Boulevard, A String-Type Shopping Street, Real Estate Market Behavior in Los Angeles -- A Study of Multiple System Listing Data, and Patterns of Land Development and Cost in Los Angeles. Information about these or any of the other numerous books, monographs, research reports, and reprints can be obtained by writing to the Real Estate Research Program, UCLA, Graduate School of Business Administration, Los Angeles 24, California.

4. The Research Division, Security First National Bank. The Research Department of this institution is well known as a source of economic and statistical data on the Southern California area and the San Fernando Valley. Their studies on the San Fernando Valley include:

(1) The Growth and Economic Stature of the San Fernando Valley, 1960, and (2) Information You May Find Helpful Regarding the San Fernando Valley. The first study mentioned is currently being conducted again and should provide a wealth of up-to-date statistical information on the San Fernando Valley. The second study contains information on home prices, tax rate data, educational facilities, hospitals, recreational facilities, shopping centers, public transportation, etc.

An annual publication of the department is their Survey of Building and Real Estate Activity in the Fourteen Southern Counties of California. This survey is now entering its eighteenth year and includes a summary of trends in the building and construction industry and real estate activity in Southern California.

For further information write to the Research Division, Security First National Bank, P. O. Box 2097, Terminal Annex, Los Angeles, California, 90054; or call 620-7314.

5. The Residential Research Committee of Southern California. This group, which has been in existence since 1939, is a non-profit organization for the development and distribution to members of factual information on conditions affecting housing, mortgage lending, construction, and related aspects of real estate in Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Santa Barbara Counties. Participating members are banks, builders, building material companies, building and loan associations, governmental agencies, insurance companies, mortgage companies, property owners, public utilities, realtors, retail stores, savings and loan associations, and title insurance companies.

The committee typically issues a quarterly report covering such items as residential building permits, sales of new tract homes, deeds recorded, survey of unsold tract homes, single family and apartment house vacancy statistics, etc. The Survey of Unsold Tract Houses includes the following data on the San Fernando Valley: (1) unsold inventory by district (northeast, central, and west), (2) inventory by length of time unsold since completion, and (3) marketability by price range. Copies are available upon request ($60 per year) from Mr. Marvin C. Diefendorf, Secretary-Treasurer, Residential Research Committee of Southern California, 433 South Spring Street, Los Angeles, California, 90054.

CHAPTER 4

RESEARCH NEEDS STUDY

Following a search of the secondary sources, primary data on real estate research needs in the San Fernando Valley were collected. The data collection process consisted of two phases. First, personal interviews with lending institutions, title companies, savings and loan associations, and others related to the real estate area were conducted. Secondly, a mail-questionnaire was sent to all members of the San Fernando Valley Board of Realtors. Thus, the first group consisted of individuals that do not earn their living directly in the real estate field, but are knowledgeable of the many facets of real estate. The second group consisted entirely of real estate practitioners.

The findings of the phase one interviews indicated that one of the greatest needs fell in the area of apartment houses and commercial property vacancy data. Respondents stated that it was difficult to get meaningful figures in this area and it would be a great service to the industry if these figures were made available at least semi-annually. Other findings can be summarized as follows: There is a need for data on the unsold housing inventory (single family dwellings), data on the dollar volume of trust deeds in the Valley (a monthly report on deeds), total transactions in Valley commercial property, loan recording in the Valley, a commercial zoning study (since the present narrow strip zoning does not appear to offer sufficient depth for proper commercial developments), a study on the influence of financing on the sales price of property, and a study of real estate turnover in the Valley.

The mail-questionnaire, which went to all members of the San Fernando Valley Board of Realtors, evoked over 350 responses. The respondents indicated a number of areas where research could benefit the real estate licensees in the San Fernando Valley. Each respondent was asked to indicate what he felt was the major real estate research need for the Valley. The major need indicated by respondents was for information to be made available on freeway plans, zoning, population trends, rapid transit, and economic data on the Valley. Other major areas mentioned with a great deal of frequency were: property valuation and market values, the problem of owner sales, financing, the use and effectiveness of advertising, vacancy rates, the use of part-time salesmen, managerial aspects, professional image, sales training, industrial climate, selection practices, and buying motivation. However, it is difficult to summarize the varied responses, and it is believed that the responses will be more revealing if given in their entirety. These responses will be found in Appendix C.

The respondents were also asked to indicate their reactions to a list of suggested areas of real estate research. The responses to these topics are listed in the rank order of their frequency of occurrence.

Number	Topic
183	A Study of Owner Sales Contrasted With Realtor Sales
178	Real Estate Advertising Effectiveness
161	The Impact of Sales by Owner on the Real Estate Market in the Valley
155	Real Estate Salesmen Selection
144	The Use of Part-Time Salesmen
143	Real Estate Market and Values in the Valley
129	Employment Practices of Realtors
121	Management Techniques and the Real Estate Broker
110	Broker-Salesman Contract and Compensation Arrangements

Number	Topic
107	Real Estate Financing in the Valley
88	Real Estate Salesmen Turnover in the Valley
78	Effect of Multiple Listing on the Real Estate Firm in the Valley
49	Why People Go Into the Real Estate Business

Comments were also solicited and again it is believed these comments will be more revealing if given in their entirety. They will be found in Appendix D.

CHAPTER 5

RESEARCH RECOMMENDATIONS

The Research Needs Survey indicated numerous subjects suitable for both major research studies and optional activities programs. Consequently, it is recommended that San Fernando Valley State College develop a continuing program in real estate research to serve the needs of the San Fernando Valley, which is one of the most rapidly growing areas in the country (currently having a population in excess of 1,000,000).

One of the purposes of the study was to determine research needs and insure there would not be a duplication of effort. In this light, it is recommended that no research be conducted in the area of land use or population trends. Both of these topics were frequently requested in the survey; however, both the County Regional Planning Commission and the City Planning Commission have comprehensive and continuing studies on population and land use in the San Fernando Valley. Very little could be contributed to existing knowledge by additional studies in this area.

There exists a definite need to distribute information currently available and the findings of future research projects to real estate practitioners in the Valley. It is recommended that this be done through the San Fernando Valley Realtor or the Weekly Newsletter published by the San Fernando Valley Board of Realtors, Inc. There is no need to establish a publication such as the Urban Review or the Realty Review for this purpose because adequate communication media already exist and can be utilized for this purpose.

The survey of research needs indicated that one of the most needed activities is a local information gathering and distribution center. It is proposed that the Bureau of Business Services and Research fill this gap and collect information on population trends, land use, zoning, freeway routes, and economic data and make this information available to real estate licensees in the Valley. This information can be assembled from a number of sources and would not require original research; consequently, it could be provided at a minimal expense. This would be an excellent optional activities program.

It is recommended that San Fernando Valley State College, through its Bureau of Business Services and Research, participate in the Division of Real Estate's major research program. Some topics recommended for future years are:

1. An Analysis of Owner Sales as Contrasted with Realtor Sales.
2. The Use of Part-Time Real Estate Salesmen in the San Fernando Valley.
3. Real Estate Advertising Practices and Effectiveness.
4. The Changing Real Estate Market in the San Fernando Valley.
5. Buying Motives of the Real Estate Customer.
6. Real Estate Salesmen Selection.
7. Employment Practices of Realtors.
8. Real Estate Markets and Values in the Valley.
9. Management Techniques and the Real Estate Broker.
10. Broker Salesmen Contract and Compensation Arrangements.
11. Real Estate Financing in the Valley.
12. Real Estate Salesmen Turnover in the Valley.
13. The Effect of Multiple Listing on the Real Estate Firm in the Valley.
14. The Influence of Financing on the Sales Price of Property.
15. Economic Base Study on the Valley.
16. Housing Needs.
17. Industrial Development in the Valley.
18. The Impact of Freeways on Property Values in the Valley.

It is further recommended that San Fernando Valley State College participate in the optional activities program of the Division of Real Estate. Some suggested items for this program are as follows:

1. How Many Brokers and Salesmen are Optimally Desirable in a Community.
2. Taxation.
3. Financing.
4. Vacancy Rates.
5. Attitudes of College Majors Toward Real Estate.
6. A Readership Study of the San Fernando Valley Realtor.
7. Fringe Areas of the San Fernando Valley.
8. Mobility of Individual Households in the Valley.
9. Condominium Housing in the Valley.
10. The Influence of the San Fernando Valley State College on the Valley.

APPENDIX A

BIBLIOGRAPHY OF REAL ESTATE AND RELATED REAL ESTATE RESEARCH STUDIES ON OR PERTAINING TO THE SAN FERNANDO VALLEY

BIBLIOGRAPHY

1964 Survey of Building and Real Estate Activity in the Fourteen Southern Counties of California. Research Department, Security First National Bank.

A summary of trends in the building and construction industry and of real estate activity in Southern California during 1964 is presented in this publication.

1966 Business Prospects, The Outlook for the San Fernando Valley. Bureau of Business Services and Research, San Fernando Valley State College, Northridge, California, 1966.

Proceedings of the annual Business Prospects Conference.

Apartment Survey. City of Burbank, July, 1963.

The study includes a statistical summary of two surveys: (1) apartment managers' survey and (2) post card questionnaires which were mailed to 7,062 apartment dwellers. Sample questions included were number of people, number of bedrooms, number of cars, monthly rental, parking, children permitted, etc. (28 pages)

Background for Planning, 1963. Welfare Planning Council, Los Angeles, January, 1964.

A comprehensive analysis of the socio-economic and growth factors in Los Angeles County based on the 1960 Census. The County is divided into 134 study areas. A broad range of data for each of these areas is presented. (92 pages)

Bennett, Charles B. and Breivogel, Milton; Planning for the San Fernando Valley, Los Angeles. City Planning Commission, Los Angeles, 1945.

Early study of the San Fernando Valley.

Berger, Jay S.; Profile of Los Angeles -- Residential Finance Census Chart Book. University of California, Los Angeles, 1964.

A summary contained in a series of charts and graphs of residential finance information derived from the 1960 Census. The Los Angeles Metropolitan Area is compared to other selected metropolitan areas and the United States as a whole.

Burns, Leland S.; Profile of the Los Angeles Metropolis -- Its People and Its Homes -- Part 3, Intra Metropolitan Contrasts: The Island Communities. University of California, Los Angeles, 1964.

An examination of socio-economic differences between selected communities in the Los Angeles Metropolis. Among those differences evaluated are population, housing, and employment. Also included is an analysis of income flows among the communities.

Case, Fred E.; Land Use and Property Taxation in Los Angeles County. University of California, Los Angeles.

Analyzes the bi-lateral impact of land use types on property tax levels in Los Angeles County.

Case, Fred E.; Real Estate Market Behavior in Los Angeles -- A Study of Multiple Listing Data System -- Research Report 5. University of California, Los Angeles, 1963.

Analysis of trends in local real estate sub-markets for the period 1953 to 1960 based on records of multiple listing services in Los Angeles County. Included are such data as average sales price of single family residences, market characteristics, dollar volume of sales, total sales, etc.

City of San Fernando Business Redevelopment Study. City of San Fernando, San Fernando.

This report is a comprehensive schematic plan outlining the direction the City of San Fernando should follow in its development as a regional shopping center. Both the City of San Fernando and surrounding areas are analyzed for population characteristics, housing trends, shopping facilities, etc. A master plan projected to 1975 and implementation procedures are detailed.

Community Labor Market Survey. California State Department of Employment, Los Angeles, January, 1964.

This study reports basic economic information relating to employment in ninety communities in which the Department of Employment maintains offices. Population data, general characteristics of the community, labor market, and wage rates in selected occupations are given. Studies are conducted on a two-year cycle in even numbered years. (180 pages)

Compatible Land Use in the Van Nuys Airport Environment. City of Los Angeles, March, 1963.

An analysis of noise levels and problems relating to the use of the Van Nuys Airport by jet aircraft. Public response factors are measured and recommendations on future land use in the area are outlined. (11 pages)

Department and General Store Map. Times Mirror Company, Los Angeles, September, 1964.

Shows locations for selected general and department stores in the Los Angeles area. 30" by 38".

Economic Study of the North Hollywood Business District. City of Los Angeles, 1962.

Economic factors of the North Hollywood business district are analyzed and related to land use, future trends, etc. Comparisons are made with selected major commercial centers in the East San Fernando Valley. (48 pages)

Eder, Herbert Michael; Some Aspects of the Persistence of Agriculture in the San Fernando Valley of California. University of California, Los Angeles, 1960.

A Master's Thesis in Geography. (139 pages)

Future Use of Gravel Pits for Refuse Disposal in the San Fernando Valley. City of Los Angeles, 1964.

Considers the life of existing and future gravel pits in the Tujunga Cone south of Hansen Flood Control Basin for refuse disposal based on both private and municipal collectors.

Goeldner, C. R. and Zuwaylif, Fadil; A Retail Trading Area Analysis of Reseda, California. Bureau of Business Services and Research, San Fernando Valley State College, Northridge, California, 1965.

Survey of Reseda trading area, attitudes and opinions of respondents.

Goerke, L. S.; Wiley, R. P.; and Wilner, D. M.; Health Districts of the Los Angeles City Health Department -- Population and Housing Characteristics From the 1960 Census. University of California, Los Angeles, March, 1962.

This document is a compilation of data from the 1960 Census of Population and Housing assembled by health districts of the Los Angeles City Health Department. Within health districts, the information is subdivided by statistical area as defined by the Los Angeles City Planning Department.

Grebler, Leo; Profile of the Los Angeles Metropolis -- Its People and Its Homes, Part I, Metropolitan Contrasts. University of California, Los Angeles, 1963.

This report establishes a profile of Los Angeles using population and housing characteristics from the 1960 Census. Los Angeles is compared to five other large metropolitan areas. (55 pages)

Growth and Economic Stature of Southern California. Security First National Bank, October, 1964.

This report summarizes economic facts about the Southern California area.

Growth and Economic Stature of the San Fernando Valley. Security First National Bank, 1960.

Comprehensive study of the economic growth of the Valley.

Height, Lewis H.; Settlement Patterns of the San Fernando Valley, Southern California. University of California, Los Angeles, 1953.

A Master's Thesis in Geography. (197 pages)

Information About the San Fernando Valley, Los Angeles. Security First National Bank, 1964.

Contains information on home prices, taxes, hospitals, schools, shopping centers, etc.

Inventory of Industrially Zoned Land. City of Los Angeles, April, 1964.

A listing of each parcel of industrially zoned land in the City of Los Angeles by census tract, site address, and geographic area. Listings give zone, use, size of parcel and data on size, and number of floors for industrial and commercial buildings. A summary listing of the above enumerated data was also compiled and gives totals for each census tract in the city. (571 pages)

Inventory of Land Use. City of Burbank.

A detailed land use survey by types of use and location in accordance to zoning. (80 pages)

Izzard, Alex E.; The Factors Influencing the Agglomeration of the Electronic Industry in the San Fernando Valley. University of California, Los Angeles, 1961.

Master's Thesis. (130 pages)

Koltnow, Peter; Dunn, George; and Bowler, Richard; Periodic Measurements of Traffic Service in Metropolitan Los Angeles. Automobile Club of Southern California, Los Angeles, January, 1964.

This study measures travel times and speeds on radial routes to and from downtown Los Angeles, on freeways, and to 32 suburban centers. Includes a history of previous studies in the Los Angeles area going back to 1930.

Land Uses -- 1960. Los Angeles County Regional Planning Commission, Land Use and Economic Studies Section, July, 1965.

Covers the San Fernando Valley and statistical areas 4 (Burbank), 33 (Tujunga), 27 (San Fernando), 13 (Encino), and 6 (Chatsworth -- West Valley). (48 pages mimeographed)

Los Angeles County, Its Place in the Nation. Los Angeles Regional Planning Commission, Los Angeles.

A summary of facts comparing the County of Los Angeles with other major population cencentrations of the nation.

Martin, Preston; *The Growth Potential for California and Selected Counties*. Great Western Financial Corporation, Los Angeles, April, 1963.

Projections for population growth, residential and industrial construction requirements, and personal income levels for 1960-1980.

Martin, Preston and Kobrok, Marie; *California Housing Demand in 1980, State and Metropolitan Areas Compared*. Great Western Financial Corporation, Los Angeles, January, 1964.

Housing and financial data are related to the housing demand projected to 1980. State and individual metropolitan area figures are given. (25 pages)

Martin, Preston and Kobrok, Marie; *Mortgage Borrower Characteristics in the Major California Standard Metropolitan Statistical Areas*. Great Western Financial Corporation, Los Angeles, October, 1963.

An analysis of housing and borrower characteristics based on the 1960 Census and related data. (22 pages)

Martin, Preston and Kobrok, Marie; *Population, Housing and Personal Income in California and Its Major Metropolitan Areas*. Great Western Financial Corporation, Los Angeles, January, 1964.

This study provides growth rates of population, housing, and personal income for Los Angeles, San Francisco, Bakersfield, Sacramento, and San Jose Metropolitan Areas. Projections for 1980 are provided for the same areas. (27 pages)

Mayer, Jackson; *San Fernando Valley: The Hidden Metropolis*. Los Angeles, 1962.

Descriptive brochure featuring highlights of the Valley.

Meeker, Marchia; *San Fernando Valley Profile, San Fernando Valley Area*. Welfare Planning Council, 1964.

A demographic study of the San Fernando Valley based on the 1960 Census. Includes discussion and analysis of family composition, population, and socio-economic characteristics of the San Fernando Valley area.

Meeker, Marchia and Street, Lloyd; Poverty Areas in Los Angeles County. Welfare Planning Council, Los Angeles, 1964.

Ten poverty areas in Los Angeles County are delineated. Poverty is predicated upon levels of income, education, and the percentage of employed males in white collar jobs. The report also indicates there is a high degree of correlation between poverty areas and areas of poor housing and minority group concentrations. The basic data for the report are taken from an earlier study, Background for Planning published in 1963. (18 pages)

Mittlebach, Frank G.; Patterns of Land Development and Cost in Los Angeles. University of California, Los Angeles.

The study will trace changes in land costs from 1945 to 1960 in the San Fernando and San Gabriel Valleys. Factors which have influenced changes in land costs will be isolated.

Mittlebach, Frank G.; Profile of the Los Angeles Metropolis -- Its People and Its Homes, Part 2, The Changing Housing Inventory: 1950-1959. University of California, Los Angeles, 1963.

This report analyzes the numerous facets of quantitative and qualitative changes in the housing stock in the Los Angeles Standard Metropolitan Statistical Area. Qualitative and quantitative factors are derived from comparisons of 1950 and 1960 Census data. (33 pages)

Monthly Summary of Business Conditions in Southern California. Security First National Bank, Los Angeles.

Business conditions in the Southern California Area are analyzed from various points of reference. Selected business and real estate statistics are included.

Multiple Dwelling Unit Trends, Study Areas by One-Year Intervals, 1960-1965. Los Angeles County Regional Planning Commission, Land Use and Economic Studies Section, June, 1965.

Special report on multiple dwelling units. (3-page mimeographed)

Nelson, Howard J. and Foster, Gerard J.; Ventura Boulevard: A String-Type Shopping Street, Los Angeles. Bureau of Business and Economic Research, University of California, Los Angeles, 1958.

A discussion of Ventura Boulevard, a main Valley traffic artery.

Pappas, George R.; *Some Socio-Geographic Factors Pertaining to the Speed of Urbanism in the San Fernando Valley, Los Angeles, California*. Ph.D. Thesis, University of Maryland, 1952.

An examination of the urbanization of the San Fernando Valley. (258 pages)

Pegrum, Dudley F.; *Residential Population and Urban Transport Facilities in the Los Angeles Metropolitan Area -- Occasional Paper No. 3*. University of California, Los Angeles, 1964.

This paper examines the impact of urban transport facilities on residential location and correlates them with the geographic structure of industrial development. (42 pages)

Pegrum, Dudley F.; *Urban Transport and the Location of Industry in Metropolitan Los Angeles -- Occasional Paper No. 2*. University of California, Los Angeles, 1963.

This paper examines factors relative to location of industry in the Los Angeles Metropolitan Area. Location trends by size of employment, availability of rail service, geography, history, and other factors are discussed. (46 pages)

Pickard, Jerome P. and Tweraser, Gene C.; *Urban Real Estate Research, 1963*. Urban Land Institute, 1965.

Annotated bibliography of real estate research.

Planning for People in the North Los Angeles County, Part I -- The Zoning Plan. Los Angeles Regional Planning Commission, Los Angeles, July, 1959.

A zoning atlas of north Los Angeles County.

Planning for People in North Los Angeles County, Part 3 -- The General Plan. Los Angeles Regional Planning Commission, Los Angeles, July, 1961.

A comprehensive long-term plan report for north Los Angeles County.

Population and Dwelling Units Bulletin. Los Angeles Regional Planning Commission, Los Angeles.

Quarterly estimates of dwelling units and population reported by 35 major, and approximately 200 smaller, statistical areas. Published continuously since 1942.

Population Estimate By Statistical Areas. City of Los Angeles, published semi-annually.

A semi-annual population estimate and housing inventory for 63 statistical areas in the City of Los Angeles. Selected related data are presented on a map of the statistical areas.

Population Projections to 1985 By Five-Year Intervals -- 14 Southern California Counties. Los Angeles Chamber of Commerce, Los Angeles, December, 1964.

This study will project population to 1985 by five-year intervals for 14 Southern California Counties. Employment and personal income will be similarly treated.

Profile of the Los Angeles Metropolis -- Census Chart Book. University of California, Los Angeles, 1963.

Selected socio-economic data from the 1960 Census condensed to graphs and charts. The Los Angeles Standard Metropolitan Statistical Area is compared to other metropolitan areas and units. (5 pages)

Quarterly Changes in the Housing Inventory, Los Angeles County, 1950-1965. Los Angeles County Regional Planning Commission, Population Research Section, September, 1965.

Special report on housing inventory. (8-page mimeographed)

Residential Research Committee Quarterly Report. Residential Research Committee of Southern California, Los Angeles, 1964.

A comprehensive compilation of factual information on conditions affecting housing, mortgage lending, construction and related aspects of real estate in six Southern California Counties. (67 pages)

Residential Traffic Generation -- San Fernando Valley. City of Los Angeles.

An analysis of traffic generation factors derived for the a.m., p.m., peak hour, and 24 hour periods. Study area includes 329 single family dwelling units in the low-middle income bracket.

San Fernando Valley, The. Los Angeles Regional Planning Commission, Los Angeles.

An area planning report currently in progress.

San Fernando Valley Master Plan Restudy, 1955. Los Angeles City Planning Commission, 1955.

Restudy of the master plan for the San Fernando Valley. Provides excellent historical benchmark from which to study changes.

San Fernando Valley Realtor. Official Publication of the San Fernando Valley Board of Realtors, Inc., Van Nuys.

Monthly publication featuring topics of interest to the real estate profession.

Saugus-Newhall Area -- 1960-1980, The. Southern California Council of Churches, Los Angeles, March, 1964.

A brief discussion of expected population growth in the Saugus-Newhall Area between 1960-1980. Most of the data are on maps. (9 pages)

Seventeen Economic Area Maps. Times Mirror Company, Los Angeles.

Seventeen areas of the Los Angeles Area shown on the different sized maps. Area I is the San Fernando Valley.

Sherman Way Study. City of Los Angeles, March, 1964.

A study of Sherman Way in the San Fernando Valley. Existing development and problems are examined and three alternate development plans are presented. Transitional aspects are also discussed. (48 pages)

Southern California Metropolis -- 1980. Southern California Research Council, Los Angeles, 1959.

An analysis of past, present, and projected trends (to 1980) in economic development, population, and public policy areas such as education, land use, transportation, etc. for the Southern California Metropolis (8 counties). (96 pages)

Standard Industrial Survey Summary Report, San Fernando Valley, Los Angeles County, California. Statewide Industrial Development Committee, California State Chamber of Commerce, June, 1965.

Gives information on population, climate, and other factors determining industrial location.

Statistical Profile, City of Los Angeles. City of Los Angeles, December, 1963.

A computer "printout" of population and housing characteristics with land use acreages by census tracts for the entire City of Los Angeles, utilizing data from the 1960 Census and other sources.

Survey of Population Mobility, Los Angeles Marketing Area. Los Angeles Times, Marketing Research Department, August, 1964.

Study on mobility indicates residents in the San Fernando Valley are above average in mobility over other areas of Los Angeles.

Urbanization in the San Fernando Valley Between 1930 and 1964. Geography Department, San Fernando Valley State College, Northridge, 1964.

A reconstruction of land utilization within the San Fernando Valley for the years 1928, 1938, 1949, 1954, and 1960. A description of the pattern for each study period is given as well as a discussion of the shaping forces. A special discussion is also included concerning the expansion of apartment construction during the post-1960 period.

Where Do Our Junior High School Pupils Live? Los Angeles City Board of Education, Los Angeles, September, 1963.

A report of a survey of 22,000 junior high school students in the Los Angeles City School Districts to determine the type of dwelling units in which they reside. Mobility data are included. (17 pages)

Zoning Analysis. City of Burbank, April, 1963.

An analysis of the current zoning ordinance. This study (part of the General Plan series of studies) contains observations on ways in which the regulations can be improved including several proposals for consideration by the Planning Department and the City Council. (132 pages)

MAPS

Land Use, San Fernando Valley, 1928; San Fernando Valley State College, Department of Geography Map Library.

Land Use, San Fernando Valley, 1938; San Fernando Valley State College, Department of Geography Map Library.

Land Use, San Fernando Valley, 1954; San Fernando Valley State College, Department of Geography Map Library.

Land Use, San Fernando Valley, 1960; San Fernando Valley State College, Department of Geography Map Library.

Land Use Plan, Canoga Park; City Planning Commission, Los Angeles.

Land Use Plan, Chatsworth; City Planning Commission, Los Angeles.

Land Use Plan, Encino; City Planning Commission, Los Angeles.

Land Use Plan, Granada Hills; City Planning Commission, Los Angeles.

Land Use Plan, North Hollywood; City Planning Commission, Los Angeles.

Land Use Plan, Northridge; City Planning Commission, Los Angeles.

Land Use Plan, Reseda; City Planning Commission, Los Angeles.

Land Use Plan, District 3, San Fernando Valley; City Planning Commission, Los Angeles.

Land Use Plan, Sepulveda; City Planning Commission, Los Angeles.

Land Use Plan, Sylmar; City Planning Commission, Los Angeles.

Land Use Plan, Tarzana; City Planning Commission, Los Angeles.

Land Use Plan, Van Nuys; City Planning Commission, Los Angeles.

Land Use Plan, Winnetka; City Planning Commission, Los Angeles.

Land Use Plan, Woodland Hills; City Planning Commission, Los Angeles.

Residential Construction, San Fernando Valley, 1960-1964; San Fernando Valley State College, Department of Geography Map Library.

APPENDIX B

QUESTIONNAIRE USED IN THE STUDY

San Fernando Valley State College
Bureau of Business Services and Research
and
The San Fernando Valley Board of Realtors

REAL ESTATE RESEARCH NEEDS QUESTIONNAIRE

San Fernando Valley State College has been authorized by the Division of Real Estate to conduct a research project entitled, "Real Estate Education and Research Needs in the San Fernando Valley." This is the first time the college has received funds from the Real Estate Education, Research, and Recovery Fund supported by your license fees. The purpose of this exploratory study is to examine the research needs of the licensees and others involved in the real estate business in the San Fernando Valley in order to recommend a program of action aimed at meeting its needs. The Division of Real Estate will use the results of this study in allocating future research dollars; therefore, your cooperation is urgently requested to pinpoint the significant research needs in the Valley.

Name of Firm ____

Address ____

__________________________________ Phone ________________

Submitted by _______________________ Title ________________

1. Indicate what you feel are the major real estate research needs for the Valley -- the areas or problems where research would benefit you.

____

____

____

____

2. The following are suggested areas of real estate research. Please check those that you feel would be worthwhile projects.

____ Real Estate Salesman Selection

____ Broker Training Practices

____ Real Estate Advertising Effectiveness

____ Employment Practices of Realtors

____ The Use of Part-Times Salesmen

____ Real Estate Financing in the Valley

____ Real Estate Market and Values in the Valley

____ Why People Go Into the Real Estate Business

____ Real Estate Salesmen Turnover in the Valley

____ Management Techniques and the Real Estate Broker

____ Effect of Multiple Listing on the Real Estate Firm in the Valley

____ A Study of Owner Sales Contrasted with Realtor Sales

____ The Impact of Sales by Owner on the Real Estate Market in the Valley

____ Broker-Salesmen Contract and Compensation Arrangements

Comments: ____

____

____

____

3. If you are familiar with any reports, surveys, or research studies pertaining to the San Fernando Valley, please list them.

____

____

____

____

____

Thank you for your cooperation. Please mail the completed questionnaire to:

Bureau of Business Services and Research
School of Business Administration and Economics
San Fernando Valley State College
Northridge, California 91324

APPENDIX C

RESPONSES TO QUESTION ONE

Indicate what you feel are the major real estate research needs for the Valley -- the areas or problems where research would benefit you.

Declining areas of value (residential).

Study of transitional areas and values.

Find the true cause of the mistrust or dislike of realtors by owners which causes them to sell "by owner" rather than list with a broker.

Why do the home owners resent the real estate salesmen talking to them, trying to list their property, when he is actually doing them the favor in trying to help them? Some home owners are actually outright nasty to them.

Education in learning how to talk on the phone to a client, education in salesmanship to see the client, education in knowing you can only be successful by pursuing one facet only of real estate.

Classified advertising program, budgeting the company dollar, and hiring practices.

How many brokers and salesmen are optionally desirable in our community? How can loan costs, interest rates, pay-off charges be minimized or reduced? How can the tax be eased up on real estate?

Evaluation -- and the education of salespeople concerning this subject. There is increased evidence of buyers' reluctance to purchase at the present price levels and taxation.

The loss of income due to too many unprofessional people and part-time people in the Los Angeles area.

There is a great need for closer cooperation between the State Division of Highways and real estate brokers relative to proposed freeway locations; also selected routes for freeways. The information now given by the State Engineer is quite "nebulous." This would better enable us to serve our clients, the general public.

Needs of the purchasing public. What do they really want? Why do they look for a three-bedroom ranch and end up purchasing a two-story, five-bedroom home?

There has been an unflinching attempt on the part of the Real Estate Associations to elevate the status of the real estate industry in the eye of the public. Research should be guided toward the answer to the following question: "Would the real estate industry make a giant stride forward toward the image of professional status if advertising, as we know it today, was to be entirely eliminated?"

Need for more legal knowledge -- responsibility to client and as subagent for another broker. Tighten contracts, etc.

Available single family dwellings and number of vacancies, available multiple income buildings and number of vacancies, population trends, including their likes and dislikes in housing, and transportation including freeway routes and rapid transit.

Information on vacancy factors in various valley areas for residential, residential income, commercial and industrial properties.

Vacancy factor in multiple units.

How to prevent problems from arising while sale is in escrow. Example, keeping informed of changes in building ordinances such as double carport is now required if you had a double garage.

Educating the public as to the function of real estate salesmen.

Proper valuation of property listed. Too many salespeople tend to overprice property just to get the listing, then have to talk the seller down from one to three thousand dollars to arrive at a realistic selling price. This has a tendancy to give the whole profession a black eye.

Builder sales contrasted with realtor sales, builder broker cooperation and exchange of ideas with realtor organizations, and to better serve the customer.

Ingress and egress of manufacturing areas, along with comparative taxation. A research question: What are industrial benefits of the San Fernando Valley?

More adequate preparation by salesmen.

Information on progress of industries, employment opportunities, small business opportunities, some method for realtors to cooperate with other agencies to beautify the streets and to bring about some architectual requirements in new construction.

How to get salesmen to make better use of their time.

Broker to broker relationship, accurate income property presentation, advertising exaggeration, and broker to client relationship.

Real Estate advertising and area of value, commission splits, and how to handle real estate brokers not legally established in an office.

Advertising effectiveness.

Population trends and movement, how much new industry and housing will be needed in the next 5, 10, and 25 years, and the present vacancy in apartment houses by specific areas and the apparent cause of some.

A method of educating the "by owner" buyer that he will probably realize no savings, in fact pay more, without a realtor.

Complete study of adopted and proposed freeway routes -- how these routes affect real estate values, sales, and make information available for realtors.

Part-time sales people and their lack of knowledge, and higher listed properties in a declining real estate market.

Traffic on streets, new freeways, new tracts being developed, new master plans for cities, and estate planning for clients.

Building of units: what areas need units, what price range, what areas bring sufficient rent to support the investment, and how to prevent over-building of units.

Recommend you look into the license requirements of the State Insurance Department wherein minimum performance required by licensee or renewal of license will not be permitted.

Employment practices of realtors, real estate salesmen selection, and the use of part-time salesmen.

Real estate advertising effectiveness -- recent "upgrading" of advertising by local boards has seriously cut down ad calls and, in my opinion, is taking the "sell" out of selling. I believe we can advertise legally and ethically without telling "everything" in the ads.

Training: we are told how to find the homeowners who may sell their property, but salespeople need a system or practical method for "follow-up" on leads -- (a bookkeeping system).

Planning and zoning.

By what means can prospective buyers best be attracted to a firm? What has happened to effectiveness of classified ads? Is residential sales volume now at a level which is to be considered normal or will it increase in the future?

Transportation -- zoning -- smog control. Land and construction costs in relation to income of Valley residents. Why the large number of new licensees when less than 15% of working salesmen earn an adequate living?

The major problem in my opinion is "highballing" an owner, or "bidding" for a listing by stating any price just to get that listing, then tying the owner up on a long contract.

Entry into the real estate profession, why failure (both real estate broker and salesman), and what is necessary to successful operation in real estate profession.

Establish an ownership library for commercial, manufacturing, and income properties.

A clearer, more precise method of evaluating income property and presenting the net (true) loss or gain in long range perspective to the buyer.

Securing new personnel -- especially younger people.

To advise and educate the public to the many duties, responsibilities of the realtor and allied salesmen, to elevate public thinking of the realtor to professional status.

Land research -- determination of factors involved in the increase and decrease of land values, i.e. acreage.

How to secure legislation to prohibit cheap door-to-door canvassing and begging, and study of law to eliminate lying and immoral advertising -- such as "guaranteed sales," etc.

Higher education qualifications for real estate brokers and salesmen.

The periphery of the Valley and its future growth.

Techniques for obtaining sales personnel.

Refresher course for brokers -- new legislation, etc., salesmanship courses for old or new salesmen on a very high ethical plain, and advertising courses.

Keeping us informed as to changes to be taking place in a community, such as freeway routes, zone changes, etc. Have maps available. We feel this information should be sent out to brokers automatically, or have a designated place where all this information and maps would be readily available upon request.

Use of part-time salesmen, use of untrained salespeople, relationship between brokers (different offices), and a better way to list property at realistic prices.

Appraisal and depreciation.

Why so many houses for sale by owner, real estate financing in the San Fernando Valley, and a course on salesmanship.

Accurate and authenticated vacancy factors in residential income, study of "part-time" salesman problems -- how many average hours, their experience and knowledge, and possible regulation directed at screening or improving the "part-timer."

How can we overcome the buyer's demands. They seem to want more for their money.

Vacancy factor in North Hollywood, south of Sherman Way between Vineland and Woodman.

What percentage of Valley residents expect to move in the next ten years?

Reasons and causes of real estate recession in the Valley compared to and related with the national real estate picture.

Projections for highest and best use of available land in ratio to population growth and estimated projections on fair market values.

Broker -- salesman image (public).

Valley areas where single family homes may be built are nearing saturation. How will this affect the Valley as to the following, since apartments will be the only new housing: (1) population increase as compared to past, (2) spendable income (do apartment dwellers spend more or less than home owners), and (3) increase in school enrollment?

Average income per family by areas (up-to-date) and per cent of residents employed out of the Valley.

Research which would make the Valley self-sufficient rather than just the bedroom of Los Angeles. Ways to bring in industry and keep them here.

Apartment vacancy factor east of Van Nuys and south of Sherman Way in one-bedroom apartments furnished and one-bedroom apartments unfurnished.

Taxation -- federal and local covering the transfer of real estate.

The over abundance of real estate salesmen.

Are brokers who employ part-time salesmen really meeting their obligation to exercise supervision of their activities?

Zoning -- (variations), tax -- (exchanges), and management -- (training).

True market value of income units.

Real estate advertising effectiveness, management techniques and the real estate broker, and broker-salesmen contract and compensation arrangements.

More advertising to educate the public on the need to use real estate brokers in the sale of their houses.

Correlation of zoning and market price of land R3-RY as to need for new construction. Example, 2 car spaces for each apartment built resulting in need for subterranean garages and a high rent structure.

A more accurate, equitable and systematic method of determining market value of property. A more honest price determination on listing property for sale that would be fair to both seller and buyer.

Comparative commercial land valuation and sales.

Too many unqualified salesmen and not enough supervision by employer's broker.

Effectiveness of advertising as compared to cost. Realtors hiring and keeping too many part-time licensees.

Zoning to protect large investments of builders and buyers and sellers of expensive to moderate residences. Upgrading and districting commercial and industrial areas. Better public image of realtors in the professional level.

Age and education background and income group of largest majority of potential real estate buyers for Valley property -- what are their most important requirements (location, transportation, schools, cultural advantages, or what)?

Management techniques -- apparently unknown to most owner brokers.

Research on "for sale by owner."

(1) 1,000,000 people and no center, (2) no convention center, (3) as population increases, where are additional centers to locate, (4) more parking -- if present business is to survive!

We need an electric rapid transit system. It would increase the population, help to eliminate smog, increase real estate. They have been talking about it since 1948 when they looked up the old Pacific Electric tracts. Let's get some action on it. It would also take 1/3 of the cars off the streets thus helping to eliminate smog and automobile accidents.

Transit expansion, main streets widening, better planning (maintaining), and single family dwelling,not so many residential income units.

Broker-seller rapport or lack of it and broker-buyer rapport or lack of it.

Discouragement of the "part-timer."

Population trends and direction of the growth. Affect of high land prices on future of home prices and feasibility of prices conforming to average buyers' ability to buy.

Zoning -- planning.

Broker cooperation (The Hanger).

Use of part-time salesmen and this effect on the income of full-time salesmen. Owner sales v.s. realtor sales and how it affects the local real estate market.

Education of the part-time salesmen so they can become full-time. Profit sharing and bonus plans.

Give the Valley and Los Angeles in general a fast transportation system (monorail) and 3/4 of the needs will be solved. (Monorail above the freeways.)

Education of the public to the benefits and needs of employing a licensed salesman. Limiting amount of part-time salesmen per office (such as one part-time for each five full-time).

More specific updated vacancy figures by small specific areas to combat overall adverse vacancy notoriety in the Valley. Also by rental category and by apartment size. Overall property transfers showing by owner v.s. by realtor.

All of the ideas below are good, particularly broker training.

Proper land use and zoning.

An education program for existing salesmen and brokers, sponsored by the State to keep them up-to-date on real estate law, etc

Real estate salesmen turnover in the Valley -- how better selection and better training would keep more salesmen in the profession and earning commensurately.

The effect of part-time salesmen on the real estate business. How much business they take from full-time people. What are the problems they present? What is their knowledge?

Research on need for increased industry in the San Fernando Valley.

(1) Apartment house rentals, management, and investments, (2) investment programs, (3) loan and financing programs, and (4) zoning, planning and building.

Change in housing needs of the residents, i.e., homes to apartments, small homes to larger. What are the demands going to be for business and industry as far as types of buildings and location?

Real estate should be treated more as a profession, not something to be retired into or a social outlet for frustrated housewives. A possible aid might be mandatory knowledge of the market conditions in specific area. Most brokers will hire anyone that may bring a commission into the office (unfortunately).

Advertising media that stimulates real estate activities and training practices and compensation practices of Valley brokers.

Salesmen selection.

Salesmen should be taught how to make better use of their time and how to follow through with prospects.

Master plan development and correlation with real estate sales organizations.

Vacancy factor, land values, replacement costs, broker control of sale prices. Listing practices, over pricing, sellers' evaluation v.s. brokers' evaluations. Buyers ability to pay percentage of income.

A program to improve the image of the San Fernando Valley Board of Realtors. The real estate business and brokers.

How to get rid of the big black ugly power poles and the telephone poles sticking up every 125 feet (even in some new subdivided areas) throughout our 112 square miles of the San Fernando Valley. "That will be the day."

Merchandising the product, obtaining maximum benefit to the company and client by obtaining maximum amount of clients through ads, etc.

Would it be of benefit to the real estate profession if we did away with the use of signs on residential properties?

Need for salespeople to really know the value of properties that they are listing.

Protect buyer by some kind of insurance against loss (irreparable); hillside development and research on future sliding conditions and protection to buyer at time of purchase to insure buyer against loss of home and investment.

Real estate salesman selection and employment practices of realtors.

Would like any and all courses that are needed to earn a certificate in real estate.

Classes to absolutely put down a positive approach to appraising homes, evaluating a home without a realistic pattern is very hard and surveys are not always accurate.

Income property sales, management, and development.

Appraising -- pricing -- terms, determining market trend, and how to use comparables.

Why not eliminate all signs on properties for sale?

We need a short, concentrated course for brokers desiring to become a realtor to give the necessary six point credit. Because present courses are too elementary and time consuming. Such courses should be offered at morning and evening time. Our contracts are mostly signed in the evening and most people can't afford to cut off their production.

A program to definitely demonstrate to the owner the superior advantages accruing to him by listing with a multiple listing broker rather than trying to sell by himself.

A course in real estate exchange and taxation.

More brokers should be on city planning or at least in advisory capacity. The college is pushing College Site Development which in turn jeopardizes the real estate business with more vacancy of apartments already surrounding the college.

Population trends in the San Fernando Valley.

Valley economic conditions, existing information indicates booming economic progress yet practical local conditions do not concur -- Why the discrepancy? This hurts real estate, especially sellers who feel they can command optimum sales price.

The people of the Valley should learn more regarding zoning, planning, and future growth in population.

Less superficial requirements for salesman license.

Why so many owners are trying to sell their own properties and give special lectures to real estate people to aid them in getting those listings.

Real estate appraisals in Arleta, Panorama City. Financing.

Business opportunity, exchanges, and planning and zoning.

City planning -- realtors should be consulted and be part of the planning commission. They should have a better understanding of planning.

Better methods for evaluating properties to put realistic sales prices on them at the time of listing.

Orderly commercial development and creation of diversified industrial base for jobs.

Real estate taxes.

Real estate advertising effectiveness and real estate market and values in the Valley.

Realtor observance of code of ethics.

How to bring more business in the Valley to promote more business.

Redevelopment of "slum" areas and use of existing vacant land.

Door to door canvassing and newspaper ads.

Why isn't our profession attracting more college graduates and younger men? How can we upgrade the calibre of people entering our profession?

Population trends in the San Fernando Valley, commercial and investment property in the Valley (trend of).

Activating a market, management of salesmen, incentive plans, and training the salesmen.

Real estate advertising effectiveness and management techniques and the real estate broker.

Short course for a broker desiring to become a realtor, to give the necessary six point credit because present courses are too elementary. Also, such courses should be available in the morning and evening.

Part-time salesmen in relation to income, success, or harm to the full-time broker or salesman.

Better and more stable industry.

Geologist land slide report.

Zoning -- Planning Commission.

Easier methods to find a given type of property. Perhaps computerize our listings.

The elimination of real estate signs on property, forcing the public to seek a realtor to find a home.

Financing of homes.

Real estate exchanges, financing, construction, land lease, and financing for construction on land lease.

City planning -- freeways, commercial buildings, schools, etc.

Proposed freeways and location of same. Building trends.

Owner-broker relationship (why an owner should employ the services of a realtor).

Research into the area of how we can keep up with difficult financing in our rapidly changing money market.

Financing.

Exchanges of real estate, financial exchanges -- lenders' attitudes, and business opportunities.

Why people buy through owner rather than through a realtor.

The changing real estate market in the Valley. Trends -- past, present, and possible future.

How, if possible, to help control the inflationary spiral of land values in this area. How to educate home owners to be realistic about the selling price they place on their property.

Income groups and where they live. New freeway routes in the Valley.

Why so many by owner signs and sales.

FHA and GI loan points. This constitutes more than half of our sales here in this area.

Population growth, direction.

Freeway -- future and present and expansion. City Planning -- future zoning, etc. Surveys on age groups and where they live. Surveys on income groups and where they live.

More professional training of salesmen before going on the street to work.

Needs of the Valley and programs that will influence development of our industrial acreage.

Planning for projected future growth regarding zoning, etc.

Commercial vacancy percentage in area. Stores and office buildings. Convalescent type hospitals.

Financing.

Real estate financing in the Valley.

Subdivision planning and its effect on the surrounding community. Locating the real estate office.

To take away the fear of John Q. pertaining to the realtor.

Cooperation among realtors, zoning regulations, exchanges, and listings at the right price.

Lot values -- south of the boulevard Studio City and Sherman Oaks. Changes of zoning in the Van Nuys area including Building Code.

Zoning.

Taxes and appraisals on real estate property plus true market values. Street improvements. Traffic patterns.

Estate planning.

I have talked to several persons recently who are taking real estate courses and they informed me they sold their home "by owner." Another contact recently, a consulting engineer, told me recently he is taking courses at UCLA so he can sell his commercial property. Is our license fee being used to best advantage along these lines?

The position or routes of future freeways, or changes in primary and secondary streets. It's hard to tell your customer you don't know where the route is to be.

Education of the public for the complete need for the real estate broker or salesman for their sales.

Better transportation (public).

Equitable taxation.

I would like some of the money for education to go to condensed courses for busy people to comply with realty board requirements. I feel experienced people should not be forced into long, drawn out elementary courses at a big outlay of time and expense.

Reason for so many FSBO.

Getting buyers. Getting listings.

Conflicts between realtors v.s. non-realtors regarding protecting the public against predatory practices.

Setting prices on listings, training salesmen.

Raise license fees to $500 to brokers and $300 to salesmen and use "extra" money for realty college courses dealing with income tax, etc.

Appraisal and evaluation.

Planning and zoning, business opportunity, exchange and taxation, and property management.

Research in actual vacancy factors in multiple dwellings in all areas. Also, in office buildings.

Research into possible future. Development of high-rise areas.

Population growth.

Creating more professionalism for the real estate image.

Real estate taxes.

Value range by geographic or census area. Population demand -- (1) economic level, (2) architectural style, and (3) multiple v.s. single family.

Land use and zoning. Land obsolescence.

Central and west Valley.

How to improve the public image of the real estate brokers. Better testing procedures and enforcement of regulations. Education of real estate people in social responsibility. Good statistical data on sales and trends.

Research of savings and loan policies. Why are they so unstable? Why are commitments not backed up much of the time? This should also extend to loan brokers and other lenders. We depend on these people and their loan commitments.

Appraising and exchanges.

Zoning, urban renewal, and professionalism.

Real estate salesman selection, zoning, and spot zoning.

Turnover rates of single family residences in each community. Which economic indicators parallel the "ups and downs" (cyclical fluctuations) of the residential and income property sales in the San Fernando Valley? Where do the buyers for single family homes come from?

Client motivation -- what makes a client choose "XYZ" company?
Client producing advertising -- what do and don't clients like?
Client attitudes -- what is it and how can we enhance it?

Vacancy factors pertaining to multiple units. Zoning, financing, packaging and developing, selling and syndicating real estate investment property.

More available research information regarding the buying motives of today's real estate customer. What effect has the increase in financing rates had on today's market?

I believe that a study should be made to determine the general feelings of property owners who are residents of the San Fernando Valley as to the desirability of eliminating the names of subdivisions of Los Angeles (such as Van Nuys, Pacoima, Sylmar, Mission Hills, and others which in reality are generally U. S. Postal Zones). Also, utilizing a true elimination of the twenty or more so-called Chambers of Commerce will do more to enhance the desirability of people to establish homes, businesses, and industry in this area. It is further believed that the constant enmity between these self-interested Chambers of Commerce are detrimental to good systematic developmental planning for the highest and best use of available space still vacant, and the rehabilitation of streets and areas rendered less acceptable wherein business and property values have declined due to loss of vehicular movement because of the new freeways absorbing these vehicles. Also, the construction of freeways effect a barrier to previously accessible business areas. It is believed that well-performed study, utilizing qualified personnel would prove beneficial to the San Fernando Valley as an entity and Los Angeles as a whole. It would show not only the desires of the majority of our inhabitants, but, if properly prepared, give us a scientific basis for forecasting population shifts, economic booms, social, cultural, and recreational needs, and a more scientific approach to demand determination for buildings and space.

How the small office can compete with the larger offices' full-page advertising.

Zoning procedures and the reasons for the decisions. Freeway studies and how they affect the prices of the homes. How lenders get away and have been allowed to loan in the manner they do and how it has hurt the real estate market.

Income units -- as investments. Raw land -- as investments. Appraisal techniques -- applicable to real estate salesmen.

Planning.

What factors are peculiar to the San Fernando Valley in determining the fluctuation in sales in the real estate market. What bearing will these factors have on values in land and housing? In what ways can the real estate profession best cooperate with business and industry to encourage greater industrialization in the San Fernando Valley?

Net population increase projections. Conditions and per cent overbuilding in single and multiple family residential. Higher qualifications for sales people.

Financing, broker (i.e. salespeople), public relations, and combat "for sale by owner."

Sale by owners and lenders, advising them how to sell, and also why turnover is so high.

APPENDIX D

COMMENTS FROM THE RESEARCH NEEDS SURVEY

COMMENTS

Most owners do not know the technical aspects of a real estate transaction. Even so, they will risk their most valuable asset, their home, to their own amateur judgment rather than trust the property sale to a broker. If we knew the basic causes, we might correct them and thus better serve the public.

Real estate as it is being regulated in the San Fernando Valley is actually a profession. Yet it is not regarded as such by most of the public or the press. A lot of public relations' work in this area is still needed.

Above findings should be available for distribution through the San Fernando Valley Board of Realtors.

Everyone knows of someone who holds a license, much income is lost to full-time salesmen in this way. License should be cherished and given only to those who wish to make a career.

What are the true real estate needs for each economic strata?

In my opinion the real estate industry would be assisted tremendously if a thorough research was made as to law suits involving the real estate broker or salesman as the defendant. This research would answer the following questions and more:

1. What percentage of these suits shows that the defendant prevailed?
2. What percentage of appeals by the defendant reversed the lower CTS decision?
3. What was the average amount of recovery by plaintiff?
4. Very important -- In what percentage of these suits was the defendant found liable for nondisclosure of a fact of which he was not aware?

The answers to the above questions, brought to the attention of the industry, may make the members thereof acutely aware of their fiduciary responsibilities, thus possibly avoiding hardship for the truly honest members who, without intent, may become liable at law.

We could use a study on savings and loan practices, payoffs, points appraisals, etc.

Proper servicing of contract listings and honesty in arriving at sales price will upgrade the real estate profession in the eyes of the public.

I feel that some study is needed regarding property taxes and the possibility of spreading the tax load to the apartment dwellers who use the facilities (i.e., schools, fire department, police protection, etc.) and do not pay for these services. This discourages the ownership of real estate and encourages a migrant temporary apartment dweller with no particular interest in the community.

Real estate values in the Valley are the same as anywhere else -- it depends on supply and demand. Salesman turnover is due to the fact that we were rapidly expanding and salesmen make changes in pursuit of greener pastures. As areas stabilize, the personnel will also follow suit. As to the effect of multiple listings on real estate firms, I feel multiple has been the cause of the successful and ethical practices in the Valley. I also feel that the sellers have benefited very much from the multiple.

I think brokers could help each other in meeting and discussing common problems.

More information should be given each saleaman in the specific art of closing the sale! We have too many part-time people who don't know how to list or sell, and they are a disadvantage to all of us.

I have recommended as a partial cure: Brokers' renewal license fee to $500.* Salesman's renewal license fee to be $300. *Allow the salesman to obtain a one-time, one-year original for $10.

New salesmen should be apprised of what is expected in this profession. The long hours, sacrifice of many personal activities are not all gravy as the new salesman thinks.

Study to develop salary plus commission plan of compensation to provide reduced turnover and better security and better management control, etc. is definitely needed -- brokers do not know "management planning," etc.

Also, let's get the educational requirements raised as a part of the salesman and broker requirements.

I've marked all as fine intent as they all need improvement; however, the use of part-time salesmen is of value to study which will bring out, I believe, how ineffective part-time workers become. They cannot follow up after a prospect is obtained, as they have another job which is their real master.

A further study would be helpful re: "feast or famine" affect of sales and cycles suffered (or enjoyed) by all salesmen and brokers. Also, not enough available multiple board figures each month, helpful but not nearly as extensive as they should be.

The by owner advertisement should be checked for sharp practices. Using of non-profit tax exempt institutions for private gain.

Will we ever have a stable financing market in the Valley? The lenders are far too vague in quoting financing to brokers.

A comprehensive questionnaire seeking realtor and salesmen's opinions would be highly enlightening, such as advisability of lock boxes, banish part-timers, etc.

We should also check on college students and inquire as to their thoughts, good or bad, on real estate as a career.

Part-time salesmen should be regulated as to the minimum amount of time allocated weekly to the profession in order to be employed by a realtor. Ethics among realtors must be improved for a more effective multiple service.

Work must be done in areas which will tend to stabilize real estate personnel -- both in admission to the profession (i.e., personality) and retention, which I feel will be found in a program of training designed to best organize the individual approach.

Major issue -- effect of licensing laws with regard to four-year license after first examination without adjustment period of two years as before, leaving too many licenses either inactive or hanging on real estate office boards.

Part-time salesmen do more harm than good in our profession.

The greatest need in real estate education is comprehensive, but less technical, compact courses in the specialties such as tax shelter, trades, resort property, etc. The working type of education rather than the educator's long-range approach.

The effect door-to-door solicitation for listings has on the professional image of the realtor. In my opinion this should be added to the check list. Other professions do not follow this practice (i.e., doctors, dentists, lawyers, etc.).

Part-time salesmen are not equipped to keep up with changing financial conditions like zoning, values, etc. They should be barred from the business as much as possible. I would be very interested, also, whether or not owners by sale are "clean" -- if they sell for the same price as those sold by realtors. How many of them close -- how many people end up losing money from taking too much time to try and sell it themselves and then sell through a broker for less than they might have been able to if they now had more time?

All are valuable subjects.

I think licensing should be stiffened up even more than recently done. Also, license fees should go up at least 100%.

As a realtor, I feel that a training program will enhance the real estate program in the Valley -- may I add throughout the country. Therefore, I feel the program is necessary.

Real estate salesmen continued education after gaining license either in office or additional aids.

I would like to suggest that a "Real Estate Sales Education Program," evening sessions, be initiated for the new salesman. If the new salesman could get sales training prior to leaving the security of a salaried job, he would not have to seek part-time employment for sales experience and realtors would not feel obligated to employ the beginner on a part-time basis. Should the San Fernando Valley Board of Realtors have funds available, I would like to suggest that they sponsor a free program allowing licensees, sponsored by a realtor, to subscribe to such a program. This would help to eliminate the high cost of training through one broker. Also, it would definitely upgrade the profession. If interest is generated with this idea, I would be happy to discuss the accomplishment of this idea at greater length.

All of the educational efforts to upgrade the real estate profession are valuable but everyone cannot attend all of them. The class on Zoning in the adult division of the Los Angeles City School system is now being conducted at Van Nuys High School. It is an excellent one, and in my opinion, a good example of what all of us need.

I would like to see the fees for real estate salesmen raised to $250 (every four years) and brokers $500 (every four years). Also, every salesman and broker to attend so many "unit" hours of educational schooling regarding real estate per year.

Use of part-time salesmen should be eliminated -- cannot function efficiently on part-time basis. This reflects adversely upon the entire profession because of hap-hazard approach of salesmen on part-time basis.

Salesmen and broker needs to be taught the need of research and stick-to-it-tive-ness.

Have all realtors know income tax basic answers in regard to selling real estate.

All very good.

All subject areas could use a study in depth.

The ethics of everyone in the business should be upgraded; either they are not aware of them or they have not studied them. Before anyone who aspires to become a part of this business, he should be made to pass a test on this subject.

Are repeated sales of homes plus commission payments to brokers pricing homes out of the buyer's reach? Ill will of many for sale by owners.

New sales people should have salesmanship training before they decide to enter real estate business. This is the area where I believe they fall down.

There seems to be a definite need to familiarize the broker and salesman for servicing the seller as promised and when promises are made verbally, the degree of responsibility.

Broker-salesman relationship should be improved, generally.

Property tax -- one simple form (example, 2% of sell price).

Political influence in acquiring zoning changes.

Some worthwhile Valley-wide arrangement should be considered to permit a longevity program to induce the salesmen to remain in an office.

The use of part-time salesmen should stop. The need for higher, ethical standards. Real estate schools like Anthonys and Lumbleau should not be open to public but for people o.k.'d by a realtor.

That there be no more part-time salesmen. Real estate schools should not permit the general public to go without being o.k.'d by a realtor.

Once this research has been accomplished, the results should be disseminated to all licensees as quickly as possible.

Taxation in relation to large sales. The lack of knowledge in this area is great and embarrassing to the broker.

"Part-time" salespeople are not adding to the profession.

For sale by owners should be discouraged by realtor board advertising to inform buyers of the pitfalls and even have the for sale by owner pay a fee to sell on his own.

There are too many unprofessional salespeople in the field. State licensed real estate schools accept persons sponsored by brokers ONLY.

I think the license fees should be raised even further. I think part-time people should be thrown out. "All or nothing."

The basic problem is not "sale by owner" but getting the proper people into our profession.

I believe there should be more cooperation between the Valley salesmen and between brokers and salesmen.

The biggest problem is training and part-time help is bad because of lack of knowledge and confidence on the part-time person. Often times unknowingly harms the people and creates a bad image of the business.

More on taxation courses.

Program should definitely stress upgrading of existing licensees, not expanding number of licensees.

Better hiring practices would upgrade the real estate broker's image to the public.

The part-time salesman is one of the greatest problems confronting the small real estate office today and should be eliminated to keep them in business. It is cut too thin.

It might be advisable to study the feasibility of composing a recognized broker-salesman's contract and a policy book which might have general acceptance. A standardization of commission splits and working rules might have a beneficial effect in eliminating some of the pirating of sales personnel.

A study to determine a mutually beneficial contract between the employing broker and his salesmen, considering not only the legal and economic values but valuation to the general public, and further enhancement of a recognized Board of Realtors being considered and recognized as "professionals" in the field of real estate.

Regarding home sales -- owners through the benefit of inexpensive schooling have entered into the home-selling field.

Please make these studies practical and not for the use of academicians.

Some of the above suggestions should be researched by individual offices only because of the variables of the market (particularly locale). Those suggestions which will contribute information on a general basis should be researched thoroughly. The purpose must lean toward increased professionalism. I believe professionalism begins with a limited selection of new salespersons.

I feel, together with many other realtors, that the time is long past for any "part-timers" to be employed -- not only for the benefit of the buying public, but for the offices who are earning their entire income by serving the public efficiently on a full-time basis. I feel this should come from the "top" -- our real estate department in Sacramento should control this overwhelming licensing of part-time.

VT 001 907

Pilot Training Programs in Home Economics.

Garrett, Pauline G.
American Vocational Assn., Washington, D.C.
Pub Date - 64
MF AVAILABLE IN VT-ERIC SET. 17p.

*OCCUPATIONAL HOME ECONOMICS, *EXPERIMENTAL PROGRAMS, *PROGRAM DEVELOPMENT, HIGH SCHOOLS, POST SECONDARY EDUCATION, *PROGRAM DESCRIPTIONS,

Teachers, supervisors, and administrators are encouraged to develop pilot programs in occupational home economics which emphasize developing marketable skills and personal qualities and attitudes important in securing and holding a job. Home economics training for wage earning is needed because of the increased labor force of young people and women, the increased funds available, and increased legislation providing for work-study programs. Questionnaires sent to 50 state and selected city supervisors furnished information about such programs. Programs included a cooperative program of home economics and vocational guidance to relate home economics to the world of work and others in the areas of child care, food service, clothing service, services in homes for special groups, home service, and orientation to occupational opportunities. More can be done in developing home economics wage earning programs (1) in cooperation with Manpower Development and Training Act and Area Redevelopment Act programs, joint programs with other fields of vocational education, and industry and business, and (2) in area vocational school, junior college, and teacher education programs. The occupational home economics teacher needs added insights into job requirements and a sense of pride in skillful performance. More should be done to relate educational programs to the economic realities of the future. (BS)

VT 001 907

ED022065

PILOT
TRAINING PROGRAMS
IN
HOME ECONOMICS

AMERICAN VOCATIONAL ASSOCIATION

VT 01907

BOARD OF DIRECTORS

President
John A. Jarvis
School of Industrial Education
Stout State College
Menomonie, Wisconsin

Past President and
Vocational Guidance
Milo J. Peterson
Department of Agricultural Education
University of Minnesota
St. Paul, Minnesota

Executive Secretary
M. D. Mobley
1025 15th St., N.W.
Washington, D. C.

VICE PRESIDENTS REPRESENTING DIVISIONS

Agricultural Education
R. C. S. Sutliff
State Education Department
Albany, N. Y.

Distributive Education
K. Otto Logan
State Board for Vocational Education
Olympia, Washington

Home Economics Education
Lucile C. Fee
State Education Department
Denver, Colorado

Industrial Arts Education
G. Harold Silvius
Wayne State University
Detroit, Michigan

Trade & Industrial Education
Byrl R. Shoemaker
State Vocational Education Service
Columbus, Ohio

AMERICAN VOCATIONAL ASSOCIATION, INC.
1025 15th Street, N.W., Washington, D. C. 20005

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

This material has been prepared for those persons who need to know about home economics pilot training programs that are related to wage earning. Intended for teachers, supervisors, and administrators in the field of vocational education, the booklet is designed to encourage and guide them in the development of their own programs.

FOREWORD

As an increasing number of women enter wage earning occupations and at the same time continue to meet the responsibilities of homemaking, home economics education finds its responsibilities and obligations amplified.

The proficiency with which women perform as homemakers and wage earners will help determine the quality of their homes and family life and their effectiveness in the world of work. Many of them need help to meet successfully the challenge.

Although both of the roles are of equal importance and concern, this booklet will deal only with preparing the individual for gainful employment in occupations which utilize home economics knowledge and skills.

New legislation has committed home economists to an understanding of what has been done and what can be done in this area. In this light, various programs of practical interest are presented here.

In general, the wage earning programs differ from those designed for homemaking preparation. The former places emphasis on developing particular or related skills to a marketable point and on development of personal qualities and attitudes important in securing and holding a job.

The establishment of such a program can be justified only when evidence determines that there are job opportunities. While all communities need programs for instruction in homemaking, wage earning programs should be created only when the job market requires additional workers.

Training for wage earning occupations which utilize home economics knowledge and skills may be offered in any of the following settings: (a) upper secondary grades, (b) a post-high school program serving high school graduates and dropouts in area schools or vocational-technical schools, (c) the junior or community college, and (d) adult education programs.

As programs for gainful employment are determined by available occupational opportunities and the needs and abilities of the persons to be trained, there will be great variation in the programs offered in the different states.

The material in this bulletin deals with the varied, experimental approaches taken by home economists in all sections of the country and the conclusions which can be drawn from the information submitted.

Dr. Pauline G. Garrett, chairman, Home Economics Education Department, University of Missouri, Columbia, prepared this booklet on this vital subject for those who need to know about the wage earning programs which are related to home economics.

PILOT
TRAINING PROGRAMS
IN
HOME ECONOMICS

The new look in vocational home economics can't be pinpointed. It's too flexible. But it can be *felt!*

New doorways to vocational education have been pushed wide open with the passage of Public Law 88-210—an "Act to Strengthen and Improve the Quality of Vocational Education Opportunities in the Nation."

Through these doorways steps the adaptable home economics educator, ready to take the lead in developing realistic programs—programs to fit her community, programs custom made to help solve its particular educational problems, and programs so designed that they can be altered to fit the community's fluctuating needs.

The new legislation will provide many of the tools that are needed to meet the challenges ahead. However, as Anthony J. Celebrezze, Secretary of Health, Education, and Welfare, said at the 1963 Annual AVA Convention, ". . . solutions to our problems require more than legislation. . . . May I encourage you to seek out new ways and means by which your strength and professional knowledge can be brought more effectively to bear on the social and economic problems of your states and communities?"

The home economist cannot ignore this statement nor can she refuse the challenge put to all vocational educators by Secretary of Labor W. Willard Wirtz when he said:

"The change in work needs which is now going on is such that the work force will not provide sufficient entry jobs for the unskilled worker. The achievement of our potential capacity for economic growth depends upon the full work force being prepared for the jobs which will be available.

"A system of education and training which is responsive to the changing skill needs of the economy is essential both to help accelerate and sustain economic growth and to stop the human tragedy of unemployment."

Home economists in vocational education who have been concerned primarily with education for homemaking are discovering that their profession is demanding additional objectives. And so, they are answering the challenge by developing wage earning programs centered upon occupations which use home economics knowledge and skills. Thus, home economics will not only prepare women and girls for their responsibilities as homemakers but will provide opportunities for them to prepare for the other part of the dual role—that of wage earner. This is an immediate challenge.

It Needs To Be Done

It needs to be done—because some 26 million young people will enter the labor force between 1960 and 1970—a far greater number than any this country has had to educate, train, and fit into the labor market during a comparable length of time.

Yet, we are confronted by the disturbing estimate that one-third of the young people beginning work in the 1960s may not have completed high school.

It needs to be done—because of the nearly 12 million boys and girls in high school today only 1.8 million are receiving any kind of vocational education. (About half of this number is in home economics!) Yet, out of every 10 fifth graders today, only 6 will finish high school and only 2 will go on through college.

It needs to be done—because of the increasing population in urban areas which has created a special need for preparation for employment.

It needs to be done—because when potential high school dropouts are offered a program preparing them for wage earning they usually stay in school.

It needs to be done—because currently there is a very high ratio of unemployment, especially in the group of young people under 25 years of age. Furthermore, boys, as well as girls, can benefit from training available in home economics programs at the 13th or 14th year or in adult classes. Students might be prepared to earn a living as a: food service worker in a hospital, cafeteria, or industrial plant; school lunch manager; interior decorator's assistant; laboratory tester; visiting homemaker; management aide in low rent public housing project; companion to older persons; family dinner service specialist, or homemaker's assistant.

It needs to be done—because vocational programs are not preparing people for a sufficient variety of jobs. For example, the Panel of Consultants on Vocational Education[1] found in one study that the ratio of vocational enrollment to the subsequent occupational distributor in wholesale and retail trade was one to 200, and in manufacturing and construction, 2 to 444.

It needs to be done—because unskilled jobs today account for only five per cent of all United States employment. During the 1960's, an average of some 2.5 million jobs will be eliminated each year by automation.

Many who are working now will need training to keep pace with the new methods, new materials, and new opportunities of the next decade. Many others will require retraining as their jobs disappear due to automation or economic change.

The local-state-federal volcational and technical education program *can* provide the appropriate training and retraining, according to the report of the Panel of Consultants on Vocational Education.

The Panel is convinced that vocational and technical education are sound investments in people. Ample data indicate that graduates of high school vocational education programs are far less likely to be unemployed than other high school graduates, that vocational education graduates *do*, in fact, work in the occupations for which they were prepared, and that vocational education increased their subsequent earnings.

It needs to be done—because with the passage of the new federal aid bill, expanded and additional vocational programs should become a fast reality. Federal funds should more than quadruple by 1967. The funds are to be distributed in grants to the states for expansion and improvement of existing vocational programs, for teacher salaries and teacher training programs, for construction of schools, purchase of supplies, equipment materials, research and evaluation of programs.

It needs to be done—because the new law provides for a work-study program directed at youths between the ages of 15 and 21 who are enrolled full-time in an approved vocational education program and need earnings to continue their vocational education. Except in special cases, no student will be employed under the program more than 15 hours in any class week or paid more than $45 in any month or $350 in any academic year.

Another innovation provided by the legislation is the residential vocational education school for certain youths, 15 to 21, who need full-time study in such a setting in order to benefit fully from their education. In determining school locations, special consideration will be given to large urban areas which have a substantial number of dropouts or unemployed.

---

[1] On October 5, 1961, the Panel was appointed, at President Kennedy's request, and charged with the responsibility of reviewing and evaluating the, then, current National Vocational Education Acts. The report, "Education for a Changing World of Work," was issued November 27, 1962.

The employment forecast in the summary report of the Panel of Consultants on Vocational Education, briefly, is as follows:

By 1970, 87 million Americans will be working full-time. The 58 million now employed will still be working, 26 million young workers will enter the world of work, and 3 million women will switch from full-time homemaking and assume the added responsibility of wage earner.

It needs to be done—by home economics because 84 per cent of the women and girls receiving federally aided vocational training in 1960-61 were enrolled in home economics classes.

It needs to be done—because a 25 per cent increase of women workers is expected by 1970. Although the population growth is expected to provide sufficient numbers of persons to meet future labor requirements quantitatively, the complex nature of many jobs will place new emphasis on the quality of the labor force. The demand will be greatest for those possessing the needed training and experience.

It Has Been Done

At the AVA Convention in December 1963, the *need* for a compilation of information on vocational home economics programs relating to wage earning was indicated.

Requests for such specific information were sent to the 50 state supervisors and selected city supervisors. Replies from those responding tally as follows:

—Ten states had no information to share.
—Twelve states reported programs in the planning stage.
—Eight states indicated exploratory and experimental secondary programs.
—Five states volunteered information concerning exploratory adult programs.

This sampling reveals a wide variety of programs—some provide training for occupations utilizing home economics knowledge and skills and others emphasize orientation to occupational opportunities.

In fact,

It has been done—in Chicago, Illinois*, where the staffs from home economics and vocational guidance have initiated a cooperative program to relate home economics to the world of work.

The length and depth of training depend on the occupation and ability of the student. In almost every occupational cluster, there are jobs for all abilities. These range from mere repetitive tasks such as those associated with crafts and household labor to those requiring technical knowledge, such as skills that are necessary for service and sales and also require the exercise of judgments.

The cooperative education program provides for the different levels of ability, provides a variety of vocational offerings based on student interests, and maintains a flexibility in administration.

**See Appendix*

At the present, there is a cooperative education program for juniors and seniors in a girls' vocational high school. All students have had two years of home economics. The girls have been employed in hospitals, day nurseries, photography studios, department stores as clothing alterers, as well as in various food service occupations and in private households.

Two programs are located in general high schools in Chicago. These courses for both boys and girls require no previous home economics training. Studies of achievement in academic subjects *before* admission to cooperative programs and *after* one year in the program indicate "sufficient improvement in academic achievement to be of significance." The dropout rate has been significantly lower.

An experimental cooperative program admitting students older than 16 years of age with less than sixth grade reading ability has been in progress since September 1963, but no statistics on this program will be available until 1965.

CHILD CARE

It has been done—in Denver, Colorado*, by the Emily Griffith Opportunity School where three courses have been completed which trained adults to assist in the care of young children in day-care centers under the supervision of a qualified director. An additional class is now in session for directors and owners of child-care centers.

It has been done—in Youngstown, Ohio*, where a pilot program for Nursery School Aides, under the Manpower Development Training Act, became the first such project in the country.

Sixteen women took the course and all graduated in October 1963. They were certified to the program by the local Ohio State Employment Office and upon completion of the training were placed by that office in private or institutional nursery schools, as baby sitters in bowling alleys, and in children's wards in hospitals.

The training program consisted of a total of 480 hours including classroom work and actual participation in the activities of a model nursery school center. It was a 16 week program embracing 30 hours per week.

FOOD SERVICE

It has been done—in Berkeley High School, Berkeley, California*, where a food service program has been offered since 1958 by the homemaking department.

Its main objectives are:

1. To provide terminal vocational training for students who would like to qualify for food service positions after graduation
2. To provide preliminary training for students who want to major in restaurant management on the collegiate level
3. To offer all students an opportunity to earn while they are learning.

**See Appendix*

**See Appendix*

When first organized, counselors helped by guiding qualified students in the program and the city school lunch supervisor helped by being the first to offer employment in the elementary and high school lunchrooms.

At present, the course is offered during two semesters. A student may take the second semester provided he or she has done well in the initial semester.

During the first semester, students attend class one period a day to learn kitchen organization, calculation of portion costs, sanitation, safety, menu planning, personal grooming, and good work habits. They also learn how to apply for, obtain, and hold a job.

The students work for one period a day in the high school lunchroom under the supervision of a cafeteria manager and the staff members. Students are rotated through all the kitchen stations in order to receive a wide variety of experience. Once a month, when they are responsible for serving lunch during the school physicians' meeting at the high school, they acquire experience in catering.

During the second semester, students work for two hours a day in nearby restaurants, school lunchrooms, and a local hospital. They receive regular beginner's wages plus school credit for this work. In this way, they increase skills and become acquainted with routines as well as realize the responsibilities assigned to a paid worker. The school has found that local employers are eager for these student workers because they have high standards of cleanliness, a pleasant approach to customers, and a responsible attitude.

To provide additional employment opportunities, an advisory committee composed of food service managers, dietitians, and labor representatives is being formed. Parents are enthusiastically in favor of the program. They seemingly appreciate the efforts of the school to add reality to this instruction and readily give their permission for the students to gain this valuable work experience.

It has been done—at Passaic Valley Regional High School, Little Falls, New Jersey*, where a program in food service for junior or senior boys and girls was initiated this year.

The program is designed to prepare the students for work and service in—as well as management or ownership of—a diner, restaurant, or catering service.

There were no textbooks available covering these activities so the teachers have based the course outline on professional restaurant management books. However, as the course progresses, they are finding the trade magazines to be invaluable.

Guest speakers and field trips were also part of the initial plan. However, the field trips had to be limited. The course has met with such success that the anticipated single class of 15 became 4 classes with 15 students in each. The juniors already have

---

**See Appendix*

requested an advanced course for next year.

In a critical evaluation of the course to date, the teachers feel that it is "too ambitious and in all probability the course, as outlined, will not be completed by June."

SERVICE RELATED TO CLOTHING

It has been done—in Kansas City, Missouri*, where an adult training course in wardrobe maintenance and repair is being given for the second time by the Family Life Education Department of the Kansas City School District. Its objective is to help women who already sew to become professional alteration seamstresses.

The class is set up for 18 periods of two and a half hours each once a week. The course fee is $13 per person. At the completion of the course, those judged proficient are awarded a certificate of merit by the Department of Family Life Education.

SERVICES IN HOMES FOR SPECIAL GROUPS

It has been done—in Denver, Colorado*, where a program was developed to prepare persons for the position of activity director in nursing homes.

This course was requested by owners and directors of nursing homes in the belief that "recreation is as necessary for the happy life of the older person as for youth; a planned activity program can retard some of the characteristics of senility; a soundly planned, wisely executed, and carefully directed activities program is an important factor in making oldsters' acceptance of institutional living easier."

Twenty-five representatives of nursing homes attended the 30 hour workshop and 22 finished the course.

It has been done—again in Youngstown, Ohio*, where an intensive training program for the home assistant has been established.

The 10 week training program includes class sessions as well as actual participation in the activities of vocational home economics demonstration centers, working in homes with the visiting nurses, and practical experience in private homes of home economists.

Twenty-three women enrolled and 22 completed the course. One enrollee took a full-time position with a certified-licensed rest home one week before completing the 300 required hours for graduation.

The trainees were certified by the local Ohio State Employment Office and placed in appropriate jobs by the office. Some of the jobs filled were at the County Home, private nursing homes, associated neighborhood centers and hospitals, as well as in private homes.

It has been done—at Arsenal Technical High School in Indianapolis, Indiana*, where the Home Economics Department has the opportunity to recommend students from the food or nursing classes for job openings in two local hospitals. This is in connection with the Diversified Cooperative Education program.

**See Appendix*

**See Appendix*

This course is planned for students who are at least 16 years old and who do not intend to continue schooling after high school graduation.

The student works a minimum of three hours a day, five days a week, for a wage comparable to the pay received by part-time employees doing the same type of work. One credit toward graduation is earned for on-the-job training and one for related classroom instruction. The high school student's load is limited to two full credits and two half credits in addition to the Diversified Cooperative Education program.

HOME SERVICE

It has been done—again, in Indianapolis, Indiana*, at the Arsenal Technical High School. In the Evening Division, two classes of students have completed 40 hours of instruction in a class titled "Homemaking Aides."

The training included subject matter such as: working with people, home accident prevention and safety, food and its preparation, home nursing, care of various age groups, and simple skills required in handling electric utensils in the home.

The students were presented with certificates of achievement upon completion of the course. Every effort is made to place the students in private homes at the beginning wage of $1.25 an hour.

It is hoped now that such a course can be offered on a one-semester basis to the potential dropout, the returning dropout, and the slow learner in the regular high schools in that area.

It has been done—in Louisiana* where six pilot classes in Visiting Homemakers Service were taught to 104 women in 1962-63.

During the summer of 1963, 50 home economics teachers were invited to receive training at Louisiana State University and Southern University. These teachers returned to their communities to organize, with the guidance of an advisory committee, a program to train homemakers interested in the responsibilities of visiting homemakers. Thirty-seven classes are now in progress.

The Homemaker Service Training Program includes the following: Introduction to Visiting Homemaker Service, Working with People in the Home, Understanding Chronically Ill and Aged; Understanding Mental Health, Family Life in Relation to Basic Nutrition, Accident Prevention in the Home, Personal Care of the Sick and Aged, Rehabilitation of the Aged and Ill, Caring for Children.

ORIENTATION TO OCCUPATIONAL OPPORTUNITIES

It has been done—in Auburn, Maine*, for instance, where a program related to wage earning has been planned at the Edward Little High School.

"The Guiding Philosophy" of this program is listed as follows:

1. Home economics should provide opportunities for students to enrich life through creative expression and to consider ways of satisfying individ-

---

**See Appendix*

**See Appendix*

ual and family economic, social, and emotional needs.

2. Teachers should provide typical situations which would aid students in acquiring skills useful in dealing with economic problems related to home and work.

3. Teachers should help students gain a knowledge and understanding of how to translate learning experiences into tangible, practical, workable activity which would and should produce a more progressive, harmonious way of life.

4. Teachers should aid students in becoming aware of the vocational opportunities offered in home economics.

In the Auburn program, there are seven home economics subject areas—foods and nutrition; clothing, grooming, and textiles; management and consumer buying; child care and family development; home nursing, and personal and family relations. Each has potential job opportunities related to it. Some of these occupations are at the professional level and require college education, while others can be prepared for in high school, post-high school, and adult programs.

It has been done—in Franklin Park, Illinois*, at East Leyden High School, where a Home Economics Work Program has been instituted.

Its objectives are listed as follows:

1. To help students to fulfill payroll jobs in a service area

2. To help guide students in the personal characteristics that are necessary in the world of work

3. To alert students (through the use of all media—newspapers, speakers, films, etc.) to the possible job opportunities that exist at the service level in the home economics field

4. To help students recognize that additional training can offer job advancement opportunities

5. To inform industry (through letters, brochures, and visits) of the assistance that the school may give through the cooperative job training program.

The program is designed for possible dropouts—the older sophomores, juniors, and seniors. There are three units in the course. A unit on "personal characteristics" includes grooming, etiquette, employee-employer inter-personal relations, business manners, etc. A unit on "job possibilities" includes guest speakers and field trips to help students recognize areas where their skills may be marketable. A third unit highlights the possibilities available with additional school work or training beyond high school graduation.

Students in the work program are given a course that is coordinated directly with the work experience in their training as a: child monitor, mother's helper, companion for older person or couple, house cleaner, waitress, hostess, machine sewer, hand sewer, kitchen helper, wardrobe girl, cook apprentice, home housekeeper, sales clerk of household items or textiles, and sewing room helper.

**See Appendix*

The students receive two credits—one for class and one for the work experience. They also are paid by their employers for their work.

It has been done—at Littleton, New Hampshire*, where this year a commercial foods course for senior boys has been instituted to enable students to go directly from school into wage earning situations.

The need for such a course became evident when the Guidance Department received numerous requests from area resort owners for boys interested in this type of work.

The program consists of the following:

1. Basic principles of cookery and nutrition
2. Planning and preparation of meals
3. Quantity cookery
4. The creative aspects of food preparation
5. Food service.

(Since there always is a great demand in resort areas for food service employees, it seems that secondary schools in these sections should consider seriously such commercial food courses.)

It has been done—in Fort Collins, Colorado*, where an "Applied Homemaking" course has been organized to meet the needs of a particular group of high school girls. Students selected by the school counselor are seniors, non-college bound, and have expressed interest in such a program. The students selected tend to be disinterested in school and many are in need of money.

The course is designed to: introduce students to types of work available to the high school graduate in the non-industrial community, give the students a reason for staying in school, help students develop ethical standards for work habits and work relationships, assist students in maintaining high standards of personal grooming and health and in managing their own time and money, give students an opportunity to earn money to assist with current expenses, and to develop skill and additional knowledge in several areas of home economics.

Besides the regular daily class period, each student is required to work a minimum of 10 hours a week. Each gets some experience as an aide to homemakers in private homes and in cooperating nursing homes for the aged. During the year, the students work with from two to six different employers and are paid a beginning wage.

Local home economists in homemaking have helped develop the course and representatives serve on the advisory committee and assist in placing and supervising students for the part-time work.

But—

More Can Be Done

More can be done—in cooperation with the wage earning courses offered in the Manpower Development and Training or Area Redevelopment Act programs or in the regular adult program in home economics in vocational education.

More can be done—in joint programs with other fields of vocational education.

Plans are being developed for offering joint programs in distributive and home economics education in several of the states.

**See Appendix*

The training a student receives in home economics contributes to the development of the skill and proficiency necessary in a number of the distributive occupations such as sales work in yard goods, drapery and accessories, ready-to-wear, household appliance or furniture departments.

More can be done—by home economics educators who also may work with educators in office education, trade and industry, and technical education to prepare students for emerging and expanding occupations.

More can be done—in cooperative programs with industry and business to provide training programs for women in technical and semiprofessional jobs.

More can be done—in area vocational schools to train youth and adults for home economics related jobs.

More can be done—in the comprehensive high school's vocational home economics program to help: the "disadvantaged" youth enrolled in school; the youth who have dropped out of school; the 11th and 12th graders in home economics courses designed to fit them for gainful employment. Also, more can be done for the 13th and 14th grade students in H.E. courses which are designed to fit them for gainful employment.

More can be done—to sharpen the dual focus of home economics education for home and family living and home economics for wage earning.

More can be done—by teacher education institutions in the preparation of vocational home economics teachers.

Although teachers for both the wage earning and homemaking courses need accurate, up-to-date knowledge, teaching skill, and an understanding of the problems confronting contemporary American families, qualifications for wage earning instructors will differ.

The teacher of a wage earning program must have the insight born of experience which will enable her to provide the student with a realistic picture concerning requirements for success, obtaining and holding a job, and effective employer-employee relationships. Of prime importance is the teacher's ability to transmit a sense of job pride resulting from skillful performance.

A great deal must be done in determining the qualifications of teachers whose responsibilities it will be to prepare students for wage earning occupations related to home economics—and in determining what this means to preservice and inservice home economics teacher education programs.

In short, more can be done—by home economics in the vocational program to bring into focus the relationship between *educational programs* in our high schools and the *economic realities* of today and tomorrow!

Although the challenge appears formidable, the responsibility of solution must be assumed and action taken to satisfy the urgent needs.

The home economists are well aware of their responsibility to provide training for wage earning, as well as for homemaking. The forecast is clear—the door is open—let us measure up to the task.

APPENDIX

**The following persons contributed information for this publication.*

Helen J. Evans
Director, Vocational Education for Girls
228 North LaSalle St.
Chicago 1, Ill.

Lois Humphrey, Coordinator
Adult Homemaking Education
Emily Griffith Opportunity School
13th and Welton Sts.
Denver, Colo.

Gertrude Hendricks
Director, Family Life Education
Youngstown, Ohio

Margaret P. Larson
Supervisor, Homemaking
1414 Walnut St.
Berkeley 9, Calif.

Lauilla J. Britt
Head of Home Economics Department
Passaic Valley Regional High School
Little Falls, N. J.

Esther Prevey
School District of Kansas City, Mo.
Board of Education Building
1211 McGee St.
Kansas City 6, Mo.

Ruth B. Emhardt
Supervisor of Home Economics
1644 Roosevelt Ave.
Indianapolis, Ind.

Odessa H. Smith
Virginia Lanston
Area Supervisors, Home Economics
Baton Rouge 4, La.

Louise F. Fettinger
Director, Home Economics Education
Department of Education
Augusta, Me.

Helen G. Westlake
East Leyden High School
Franklin Park, Ill.

Marian Proctor
Littleton High School
Littleton, N. H.

Doris McKellar
Ft. Collins High School
Ft. Collins, Colo.

PUBLICATIONS COMMITTEE

Chairman
Gilbert G. Weaver
98 Deepdale Drive
Manhasset, L.I., New York

Agriculture
George Wiegers, Head, Department of Agricultural Education
University of Tennessee
Knoxville, Tennessee

Business
P. G. Haines
Associate Professor
Michigan State University
East Lansing, Michigan

Distributive
Roman F. Warmke, Director
Economics Education
University of Minnesota
Minneapolis, Minnesota

Guidance
Mary Jane Miller
Counselor, J.S. Morton High School & Junior College
Cicero, Illinois

Home Economics
Pauline Garrett, Chairman
Home Economics Education Department
University of Missouri
Columbia, Missouri

Industrial Arts
Robert Swanson
Professor and Head
Woodworking Department
Stout State College
Menomonie, Wisconsin

Members of AVA's Home Economics Publications Committee include: Dr. Garrett, chairman; Rita Youmans, Professor, Home Economics Education, University of Wisconsin, Madison; Genevieve Pieretti, State Supervisor, State Capitol, Carson City, Nev.; Neva Jones, Head, Home Economics Education, Georgia State College for Women, Milledgeville; Hester Munden, Area Supervisor, Homemaking Education, Pittsburgh, Pa.; Florence Hatfield, Homemaking Teacher, Hope High School, Hope, Kan.; Ruth Ritter, Homemaking Teacher, Pennfield Central School, Pennfield, N. Y.

VT 002 019
Activating a Nutritional Education Program in Pennsylvania Schools.

Pennsylvania State Dept of Public Instruction, Harrisburg
Pub Date - 65
MF AVAILABLE IN VT-ERIC SET. 47p.

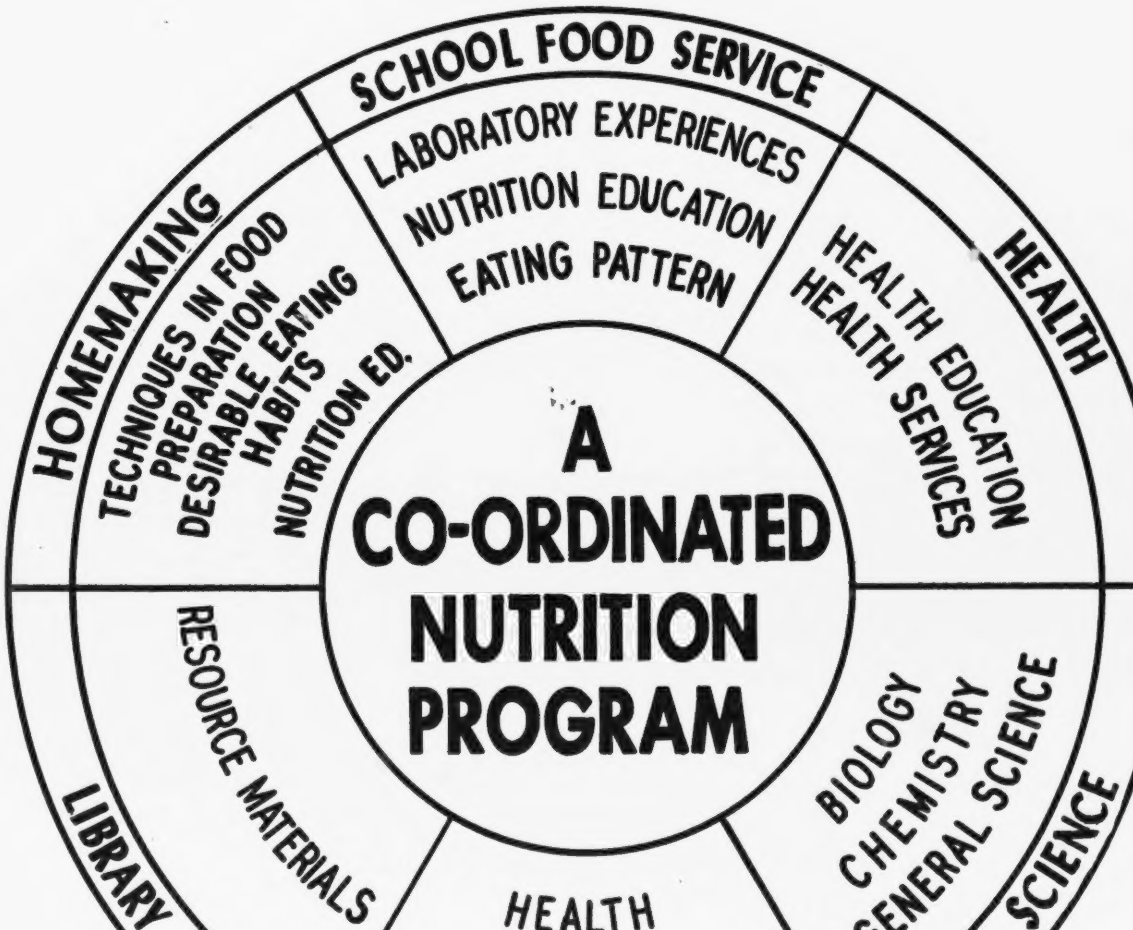
*NUTRITION INSTRUCTION, *RESOURCES, COMMUNITY RESOURCES, HEALTH, INTERDISCIPLINARY APPROACH, *PROGRAM DEVELOPMENT, FOOD, ELEMENTARY SCHOOLS, HIGH SCHOOLS, LESSON PLANS, PROGRAM DESCRIPTIONS, PROGRAM COORDINATION, NUTRITION,

The purpose of this bulletin is to suggest areas of learning and principles to follow in building good nutritional practices in children. The significance of food and the nutritional needs of children are discussed. In planning a coordinated nutrition program, the nutrition education should be integrated with subject matter in the sciences, biology, chemistry, general science, home economics, health education, elementary education, food services, health service, and the library. Programs are suggested for (1) a sixth grade nutrition unit, (2) a senior high program, (3) a cooperative project, in which high school students taught 5 lessons in nutrition in first and second grade, (4) a total school project, (5) a cooperative project involving a homemaking teacher and a grade teacher, and (6) a dietary counseling program involving homemaking teachers, health nutritionists, and community resource personnel in Pennsylvania. Some of the resource persons available to help a school develop a nutrition education program are home economics teachers, school lunch supervisors, school nurses, health teachers, librarians, physicians, members of the parent-teacher organization, dentists, dietitians, and public health, food service, and extension personnel. Nutrition education resource materials are listed. (MS)

VT 002 019

ED022065

ACTIVATING A NUTRITION EDUCATION PROGRAM IN PENNSYLVANIA SCHOOLS


SCHOOL FOOD SERVICE
LABORATORY EXPERIENCES
NUTRITION EDUCATION
EATING PATTERN
HEALTH
HEALTH EDUCATION
HEALTH SERVICES
HOMEMAKING
TECHNIQUES IN FOOD PREPARATION
DESIRABLE EATING HABITS
NUTRITION ED.
A CO-ORDINATED NUTRITION PROGRAM
LIBRARY
RESOURCE MATERIALS
SCIENCE
BIOLOGY
CHEMISTRY
GENERAL SCIENCE
ELEMENTARY EDUCATION
HEALTH
SCIENCE
READING

COMMONWEALTH OF PENNSYLVANIA
Department of Public Instruction
Harrisburg
1965

VT 002019

COMMONWEALTH OF PENNSYLVANIA

Governor
William W. Scranton

J. R. Rackley
Superintendent of Public Instruction
and
Chief Executive Officer, State Board of Education

STATE BOARD OF EDUCATION

Dr. Otis C. McCreery
Chairman

COUNCIL OF BASIC EDUCATION

Mrs. Albert M. Greenfield
Chairman

Joseph F. Burke
Dr. Paul S. Christman
Parke H. Lutz
Emaline K. Mohr
Dr. William M. Potter
Walter F. Wilmarth

COUNCIL OF HIGHER EDUCATION

Charles G. Simpson
Chairman

Frank N. Hawkins
Dr. Katherine E. McBride
Dr. Otis C. McCreery
Gail L. Rose
James H. Rowland, Esq.
Dr. Leonard N. Wolf

MEMBERS AT LARGE

Mario C. Celli
Ira C. Gross
Duane E. Wilder

Severino Stefanon
Secretary to the Board

TABLE OF CONTENTS

INTRODUCTION 1
  Basic Beliefs 1
  Purpose of Publication 2
FOOD—its significance in our lives 3
  A. *Nutritionally* 3
  B. *Culturally* 3
  C. *Psychologically* 3
  D. *Esthetically* 3
  E. *Economically* 3
THE NUTRITIONAL NEEDS OF CHILDREN 6
  A. *Defining the Needs* 6
    1. *Nutritional status of various age groups* 8
  B. *Ways of Meeting the Needs* 10
A COORDINATED NUTRITION PROGRAM 16
  A. *Ways to Initiate, Develop and Coordinate a Program* .. 16
  B. *The role of:* 16
    1. *Instructional Areas* 16
    2. *Health Services* 18
    3. *Food Service* 17
    4. *Counselling Services* 17
    5. *Community Resources* 19
PROGRAMS IN ACTION 20
RESOURCE MATERIALS 37
BIBLIOGRAPHY 43
ACKNOWLEDGMENTS .... Cover 4

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

MESSAGE FROM THE SUPERINTENDENT OF PUBLIC INSTRUCTION

"Food and nutrition play a significant role
in the lives of all people"

Public awareness of the relationship of health to nutrition has increased during the last decade. Much still remains to be done in bringing the eating habits closer to the patterns indicated by scientific discoveries in the field of nutrition research. The National Nutrition Education Conference of 1962 which met in Washington, D. C., recognizing this need, recommended that nutrition action programs be initiated at all levels beginning with the pre-school child.

In the interest of implementing the recommendation of the National Nutrition Education Conference of 1962, a State committee with representatives from health, home economics, nursing and school food service was appointed by the Superintendent in January, 1963, to develop a publication on nutrition education. Special direction was given to the committee to prepare materials which involved more than just the classroom instruction in nutrition.

Realizing the school has a responsibility for coordinating nutrition action programs, this bulletin is designed to give impetus to individuals or groups or a combination of both to initiate a creative and challenging program to improve the nutritional status of all people.

The bulletin, "Activating a Nutrition Education Program in Pennsylvania Schools" provides the concepts needed for such a program. It suggests ways of developing programs in accordance with the basic beliefs of people concerned with meeting human nutritional needs.

J. R. Rackley

ACTIVATING A NUTRITION EDUCATION PROGRAM IN PENNSYLVANIA SCHOOLS

CHAPTER I

INTRODUCTION

The school is the agency responsible for providing a well-coordinated nutrition education program. The school curriculum is strongly influenced by the sociological, scientific, technological and economic changes in society. As a result of these changes, the inclusion of nutrition education as an integrated part of the school program is recommended.

At the pre-school age level, the family exerts the most important influence on the development of the child's food habits. When he enters school, classroom teachers, health and food service personnel and other children become additional factors influencing his eating habits. By teaching the basic elements of nutrition and establishing goals of optimum health, it is believed that many of the food habits established in these years would carry over into adult life.

A continuing program in health and nutrition education should be the aim of every junior and senior high school. To achieve this goal it is necessary that nutrition education and all other disciplines be carefully coordinated with the food service program as a laboratory.

Parents, teachers, specialists and students are members of a team concerned with developing children's physical, mental and emotional well-being. Concerted effort such as this requires guidance. To clarify thinking and to provide direction to the nutrition education program the following basic beliefs are offered.

- Food and nutrition play a significant role in the lives of all people. In addition to promoting physical well-being, food has cultural, physiological, and esthetic values.
- Every individual needs to understand what food does for the body and how to select it in order to achieve optimum health.
- Food habits established in early years are likely to persist.
- Nutrition education has a positive influence on the establishment of good food habits of children which can carry over into the home.

- The school has a responsibility for providing a coordinated instructional program in nutrition education, built upon sequence and related to the maturity level of the child.

- Nutrition education can be included in a number of curriculum areas and the school food service program can provide the practical application.

- The school food service program has the responsibility to contribute to the health and well-being of children by providing attractive, nutritionally adequate meals.

- The chief school administrator has the responsibility to provide and support nutrition education and quality food service at all levels by using school and community resources.

Purpose of the Bulletin

In accordance with the philosophy and basic beliefs inherent in the food service and nutrition education program, this bulletin attempts to suggest areas of learning as well as guiding principles that can be gainfully explored. It offers major divisions such as:

Food - it's significance in our lives

Nutritional Needs of Children

A Coordinated Nutrition Education Program

Programs in Action

Resource Materials

CHAPTER II

THE SIGNIFICANCE OF FOOD

Food habits result from the interaction of physiologic, psychologic, cultural, and economic factors. They develop from earliest infancy and have well-established foundations before the child enters school. During school years, the habits may be modified in direction or given greater breadth by the combined influences of the home, school, and community.

The full benefits of good food habits extend throughout life and constitute a major environmental influence upon the achievements of that life. Poor food habits may have a deleterious effect on health during the growing years. More often the faulty practices in nutrition do not become fully manifest until later in life. Unfortunately, the habits developed early in life are modified with great difficulty in later years. It is, therefore, incumbent upon the home and school to effect the development of desirable food habits during the pre-school and school years.

Physiologic mechanisms regulate the sensations of hunger and thus stimulate the individual to eat. Hunger does not control the amount of food eaten, however, since hunger contractions cease when eating begins.

Appetite may often accompany hunger; it may also be present without hunger.

Each of the senses plays an important role in the acceptance of food. First of all, odors of familiar and well-liked foods create pleasurable feelings and the desire to eat. On the other hand, cooking odors of disliked foods, or other disagreeable odors, as in poorly ventilated rooms, may interfere with the intake of food. The eye, likewise, aids or hinders the intake of food. Much can be said for a tastefully appointed table or cafeteria line, and for colorful food attractively served in suitable size portions. Children are sensitive to colors, the shapes, and the separation of foods on the plate. In a school lunchroom a given size of portion appears to be huge to the eight year old, but much too small to the sixteen year old. Children are attuned to the immaculate grooming and gracious attentions of the food service personnel.

Food which smells good and which looks good enough to eat must also stand the tests of touch and taste. Temperature of food is important, but very young children prefer lukewarm to very hot foods and are likely to allow ice cream to melt a little before eating it. Many adjectives can be used to describe the "mouth feel" of foods; for example, soft, chewy, smooth, crisp, velvety, or lumpy, stringy, tough, grainy, sugary.

Taste sensations result from the stimulation of the taste buds on the tongue, but are also conditioned by the sense of smell. For example, foods seen to be much less flavorful when the nose is obstructed as with a cold. Flavors are combinations of the four taste modalities--sweet, sour, salt, and bitter. Some persons have many more taste buds than others and are more highly sensitive to variations in flavor. A given food may be too salty for some, just right for others, and not salty enough for still others. Some people prefer very sweet foods, while others do not especially care for them.

Young children have many more taste buds than older people, and hence they usually dislike highly flavored foods. Only gradually do they develop a liking for strongly flavored vegetables and strong spices. If they are forced to eat such food in early years, the dislike may well be carried into adult life.

On a physiologic basis alone it should be clearly evident that considerable variations in food acceptance might be expected because each person is highly individual in the acuity of his senses. Moreover, the senses can be developed so that the individual finds enjoyment in a wide variety of food experiences and becomes discriminating in his choices.

Food has many meanings to people. Early in life the infant learns to associate feeding with warmth and being held. Milk is thus often referred to as a security food. People eat to satisfy their emotional problems; students who find release in visiting a sandwich shop after an examination; a boy or girl who finds it difficult to make friends may eat to the point of obesity; a pupil failing in school may eat snacks of poor quality to excess, while another failing pupil may eat very little; a grieving person finds comfort through the ingestion of food; and so on. Marked deviations in food intake may sometimes provide a clue to difficulties an individual is experiencing.

Foods acquire status or prestige value. Expensive foods, or those difficult to prepare, or exotic foods from other lands represent status in entertaining--for example, lobster, caviar, vintage wines, breads home baked with hand ground flour, and so on. Prestige values are not constant, for the so-called status food for one group is not so for another. The teen-ager looks upon pizza and hoagies as status foods, but uses another set of values when he takes his girl to dinner in a restaurant.

Some foods are associated with self-denial whether in terms of religious fasts or the requirements of a given diet--for example, reducing. Fish, skim milk, and unsweetened foods may be in this category. Because adults often place such values on foods, children too learn to spurn them.

Economically deprived people of necessity limit their food to a relatively small number of choices. The child from such an environment may be overwhelmed by the much wider variety of food offered him in the school cafeteria, but given guidance he is usually quite amenable to the broadening of his food acceptance. On the other hand, the economically privileged may have been exposed to a wide variety of foods. Some of the latter have not developed discipline in the wise choice of foods, and resist the acceptance of a nutritionally adequate meal. Poor nutrition is not confined to either the culturally deprived or the pampered child.

Almost any community and the school within that community has a rich cultural heritage which can be used to enrich the food experiences of the child. Throughout history, the sharing of food has been the way to show friendship and concern for others. In most cultures it is a social affront for a guest to refuse to eat food offered to him. The understanding of the peoples of the world can be greatly fostered through a study of the food resources, the favorite dishes, and the meal customs of various cultural groups. Too often a child who comes from another ethnic group is made to feel by his peers that the foods to which he is accustomed are in some way inferior to those of his classmates.

In summary: Each individual has unique food habits and needs just as he is unique in other aspects of his physical, intellectual, and emotional life. His education in the application of the principles of food selection for physical growth and development is basic to his achievement of full intellectual and emotional growth. To that end the parent, the school administrator, the cafeteria manager, the teacher--physical, science, art, social studies, health--may well direct their efforts.

CHAPTER III

THE NUTRITION NEEDS OF CHILDREN

A. Defining the Needs

Nutrition is the science of foods and their relation to health. It includes consideration of both the kinds and quantities of substances which man obtains from food to maintain good health. There are at the present time over 40 nutrients known to be required by the human body for normal growth and function. The nutrients must be supplied in the proper quantities, and the quantities required vary with age, sex, activity, environment, and physical condition of each individual.

Estimates of the nutrient intakes which would be adequate to maintain good health for children living in the United States have been developed.[1] These are known as the Recommended Dietary Allowances. These recommendations were first published in 1943 and they are revised periodically as new knowledge has developed. The allowances are not the minimum levels of intake required to prevent signs of nutritional deficiency. Individuals, even those of similar age, differ in their basic requirements for a specific nutrient. The recommended allowances are set high enough that they take into account those who have needs greater than average and thus substantially cover the needs of all healthy persons and provide a margin of safety as well. The allowances are meant to be used as goals for planning food supplies and for interpreting the food consumption of groups.

Recommended allowances have been established for calories, protein, calcium, iron, vitamin A, thiamine, riboflavin, niacin, ascorbic acid, and vitamin D. Quantitative allowances have not been recommended for carbohydrate, fat, water, sodium, potassium, phosphorus, magnesium, copper, B_{12}, pantothenic acid, biotin, vitamin E, and vitamin K. This is in part because requirements for some of these are not known and in part because dietary deficiencies are unlikely to occur. More to the point, a diet of ordinary foods which meets the recommended allowances for the specified nutrients will contain sufficient quantities of the others.

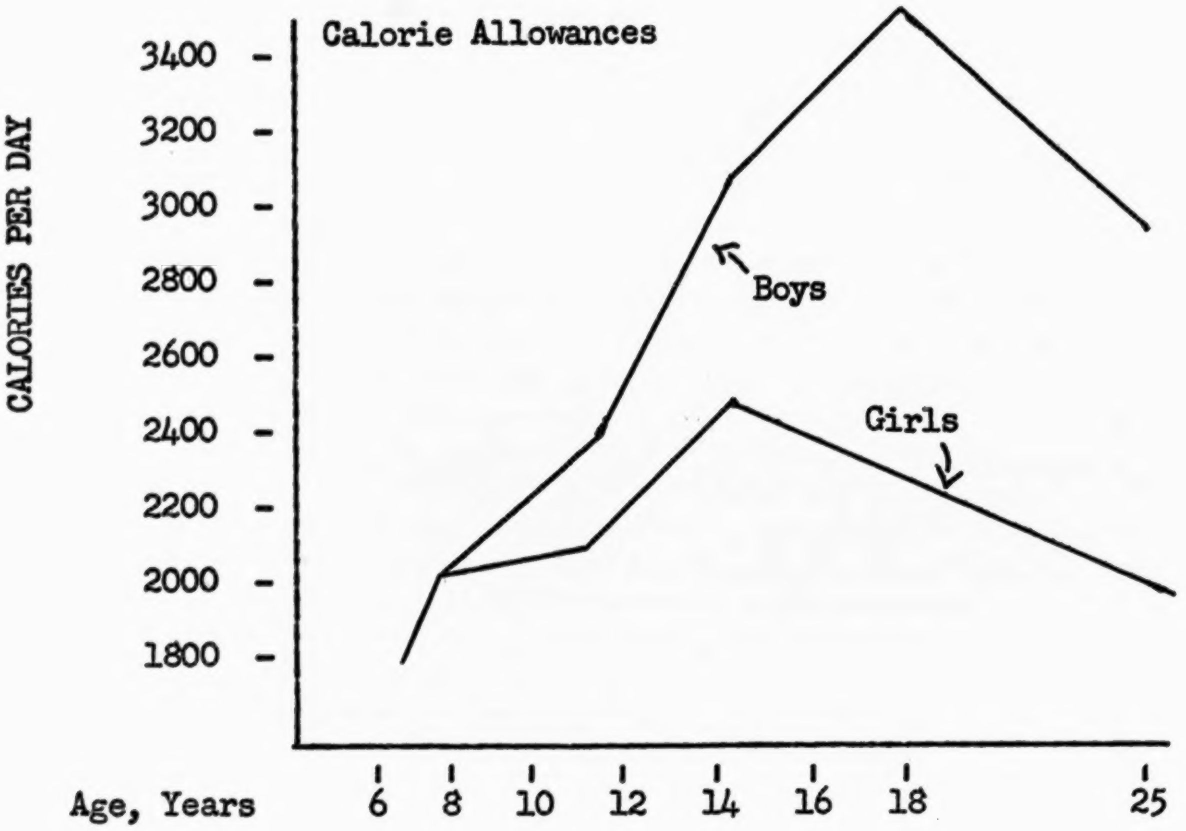
The recommendations for calorie levels differ in one important respect from those for the other nutrients in that margins above minimum needs are not recommended. Recommendations for boys and girls by age are presented in Figure 1. The energy required by the body is dependent upon many factors. Energy is needed for basal metabolism, i.e. for the maintenance of body temperature and processes such as the heart beat which are not under voluntary control. The basal requirements per unit of body weight are highest in infancy and gradually decline with age. By the time adulthood is reached, the basal energy needs for women are about eight percent less than for men. Calorie needs are also dependent upon the total lean body mass of the individual. Until about the age of nine, boys and girls have similar calorie needs; after that time, growth rates separate them. The major factor determining calorie needs is, however, physical activity. Youngsters who are physically active require higher levels of energy intake than those who are inactive. Thus the recommended allowance for calories for a boy of twelve weighing 98 pounds is 3000 per day (See Figure 1), but John who weighs 110 pounds and who plays baseball every evening will need to consume more calories and Joe who sits on the curb watching will need to consume less. Current evidence indicates that the active individual is more likely to adjust his calorie intake to energy expenditure than the inactive individual. It should be remembered that weight control has two parameters, calories consumed and calories expended. The allowance for calories for the individual child must be derived from observation of his growth, activity, and body fatness. Therefore, body weight is a useful measure of the caloric adequacy of the diet.

---

[1] Recommended Dietary Allowances, publication 1146, National Academy of Sciences, National Research Council, Washington, D. C., 1964.

Calories in the diet are derived from carbohydrate, fat, and protein. Protein has another important function. It is necessary as a source of nitrogen and amino acids utilized for the synthesis of body proteins and other nitrogen-containing compounds. Proteins differ qualitatively. They are composed of varying proportions of amino acids. More than 20 amino acids have been found to be physiologically active. Some can be synthesized in adequate amounts from other nitrogen containing compounds; at least eight cannot and they must be supplied by food sources. The quality of a protein is determined by its supply of these 8 amino acids. Proteins from animal sources are generally of high quality. The recommended allowance for protein for children approximates 10 percent of the calories, of which ¼ to ½ the protein should be high quality. Thus the child consuming 2500 calories should be getting 250 calories as protein. Since there are 4 calories per gram of protein, his diet should contain 63 grams. When these conditions are met, the recommendations provide about twice the minimal need for an average child. A general estimate based on body weight would be 1¼ to 1½ grams of protein per kilogram of body weight.

Of the minerals, calcium is the most abundant in the body. The infant's body is about 0.8% calcium and the adult's, 1.5 to 2%. The requirements for skeletal growth for children from the age of one to nine will be met by diets containing 0.8 grams of calcium; for those from age nine to twelve, 1.1 grams. For boys between the ages of 12 to 18 the recommended level is 1.4 grams; and for girls, 1.3 grams. These recommendations are usually translated into terms of milk because it is very difficult to obtain the amounts of calcium recommended unless milk is included in the diet. The diet containing the recommended levels of protein and calcium is likely to contain enough of the phosphorus needed for skeletal growth as well. Therefore, allowances for phosphorus are not specified.



Weight, Lbs.					
Boys	53	72	98	134	154
Girls	53	72	103	117	128

Figure 1. Calorie allowances for boys and girls by age based on the Recommended Daily Dietary Allowances, National Research Council Publication 1146. These allowances must be adjusted for differences in body size.

Iron is an essential constituent of hemoglobin and serves important functions in other enzyme systems. Quantitatively the major portion of total body iron is found in the red blood cell. Recommended allowances for children 6 to 9 years of age are 12 milligrams; for children from 12 to 18, 15 milligrams. The recommendation of 15 milligrams of iron for children of 9 to 12 years of age reflects a need occasioned by the growth spurt at this age; for the older children, provision of adequate stores. It should be noted that once growth is obtained, the normal male maintains iron equilibrium without difficulty. The normal female, however, must replace iron lost during menses and pregnancy. The adolescent girl is vulnerable to iron deficiency because at the time her physiological need for iron increases, her dietary practices deteriorate.

Thiamine requirements vary with the calorie content of the diet. The recommended allowance is 0.4 milligrams per 1000 calories and not less than 0.8 milligrams should the calorie intake be less than 2000. Riboflavin and niacin allowances are also computed on this basis and the recommendations are for 0.6 milligrams riboflavin per 100 calories and 6.6 niacin equivalents per 100 calories. A niacin equivalent is one milligram of niacin or 60 milligrams of tryptophan, an amino acid which can be converted to niacin in the body.

The recommended allowances for vitamin A are 3500 I. U. for children ages 6 to 9 years, 4500 I. U. for children 9 to 12 years, and 500 I. U. for older children and adults. Many related substances have vitamin A activity. The allowances are based on the average diet in which one-third of the vitamin A activity is provided as the preformed vitamin and two-thirds as carotene.

Recommendations for dietary intake of 60 to 80 milligrams of ascorbic acid daily for children from 6 to 18 years of age are based on observations that although much lower levels protect against scurvy, the higher levels appear better for optimum health over a period of time.

The last nutrient specified in Recommended Dietary Allowance is vitamin D, which is essential for calcium and phosphorus retention. Vitamin D differs from the other nutrients discussed because it can be obtained either through dietary sources or through the activation of 7-dehydrocholesterol in the skin by ultraviolet light. Dietary needs differ with the exposure to sunlight. A total intake of 400 I. U. of vitamin D appears sufficient for maximum calcium retention during the school years.

A further refinement of defining the nutritional needs of children is the development of recommended patterns of food intake. Thus patterns such as the Basic Four or the Protective Food Groups have been established as guides for the inclusion of certain foods in the diet as nutrient sources. These guides provide excellent basis upon which to build a knowledge of foods and the contributions they make to body needs. Unfortunately, these guides often constitute the total educational program, and for this purpose, they are inadequate.

B. Meeting the Needs

Current trends in nutrition give promise of an ever-expanding knowledge in a variety of areas. Although man's interest in food and well-being is ancient, the development of an organized body of knowledge in this area is relatively recent and rapidly expanding. One goal for the nutrition scientist is to define the composition of foods, to characterize foodstuffs both quantitatively and qualitatively and the development of new analytical techniques have made it possible to determine more precisely the components of foods. Thus the protein content of a food may be described in terms of the quantities of the amino acids; the carbohydrate content, in terms of specific monosaccharides and disaccharides. Another area of study is the determination of the functions of all the nutrients, their chemical changes within the body, and the relationships between them. It is important to know the biologically available forms of nutrients, the metabolically active forms, the enzyme systems in which they function, their immediate products, and their interdependence. Water-soluble vitamins are now recognized to function as co-enzymes in a variety of systems; the role of vitamin A in vision has been elucidated although the total role of the vitamin in health is not clearly understood as yet; and current work with fat-soluble vitamins suggests that they have important roles in the control of metabolism. The nutrition scientist is also concerned with understanding the health relationships of all nutrients at different levels of intake throughout life. The most important development in this area is the recognition that nutrient needs differ not only from person to person but also for the individual depending upon physical development, environment, and stress.

The educator faces the task of interpreting this knowledge to his students so that they in turn may put it into practice. In the Introduction it was noted that "Every individual needs to understand what food does for the body and how to select it in order to achieve optimum health."

Nutrition needs are met by consuming food. Optimum nutrition may be defined as the selection and consumption of foods of the quality and quantity needed to provide the appropriate nutrients for optimum health. The individual desirous of practicing optimum nutrition must be aware of the body requirements for specific nutrients and the factors which affect these requirements. In addition, he must know from what combinations of foods he can obtain what he needs, and further, he must be so motivated that these are the foods he consumes.

Involvement of the youngster in nutrition through appealing to his interest in himself is an approach that can be useful to all ages. Repeated studies have indicated that as a group, teen-age girls have the poorest diets. Teen-age girls are extremely interested in their appearance and this offers a point of departure for projects in health and, therefore, in food selection. Weight control is a topic of major interest to these girls because of their interest in appearance. Weight control is a topic of major interest to adults concerned about these girls because the most common form of malnutrition in this country today in both teen-agers and adults is excessive body weight. The teacher could introduce the unit by asking each girl to keep a record of her food intake for a period of time, with appropriate emphasis given that these are to be used by the student for a project and are not to be turned in for a grade of "good" or "bad." The students could then calculate the nutrient content of their diets. This would serve two purposes: it would develop an awareness of the varying proportions of calories, protein, vitamins, and minerals contributed to the total diet by different foods, and the student could then compare her actual intake with the levels recommended for optimum nutrition for her. The student could then see what adjustments in food choice could improve the nutrient quality of her own diet. Records of physical activity could be kept and related to the records of calorie intake. It may be noted that the suggestion is not made that such a project be developed for over-weight girls. The purpose of nutrition education should be developed for the habits and attitudes for a lifetime. The concept of weight control for all, not the reduction of body weight for a few, should be the objective. The purpose is to involve the learner, not to embarrass her. Concurrently in this type of project the youngster would be reminded that calories are not the only nutrients to be derived from foodstuffs nor are they the only factor to consider when making food selections.

Teen-age boys are concerned with appearance also and similar projects could be developed for them.

How does the School Lunch Manager go about providing an adequate lunch for 35 cents? Why must a Type A lunch include ½ pint of milk? Can the class plan a meal of the foods they would like for 35 cents? Does the meal supply the nutrients they need? Why do the cooks in the lunchroom use such a little bit of water when they prepare the vegetables for lunch?

Questions, answers, projects, activities in the schoolroom, the lunchroom, and the home should be designed and coordinated to provide the child with the opportunity and the motivation to learn why food is important to him and how his nutritional needs may be met.

What determines the food choices a child will make? What influences can be brought to bear upon the child so that he will be able to make the right food choices? The answers to these questions constitute the framework upon which a coordinated nutrition education program within the school should be constructed.

It is often asserted that children possess an innate ability to select an appropriate diet. The evidence most often presented to support this view is based on the observations of Clara Davis that infants permitted to select their own foods for periods of time varying from six months to one year selected diets which appeared optimal and that the quantities of foods consumed appeared to be related to their needs.[1] What is not pointed out, however, is that the variety of foods from which these children were permitted to choose was limited. The children were offered and made their choices between meats, cereals, eggs, milk, fruits, and vegetables. The children were offered a choice of beets, carrots, peas, turnips, cauliflower, cabbage, or spinach. The child was not offered a choice of beets, carrots, or a candy bar.

The major importance of food physiologically is that food serves as the vehicle through which nutrients are obtained, but food choice is rarely made on the basis of its nutrient content alone. Palatibility, appearance, color, odor, cultural patterns, and social values all influence food choice. With the advent of modern technology, the varieties of foods from which the individual may select his diet have increased tremendously. The child of 50 years ago received an orange as a very special Christmas treat. Oranges and orange juice are now available to children 12 months of the year; they are no longer a special treat. Orange juice must compete with a variety of other fruit juices, beverage preparation, and soda pop for the child's attention.

By the time the child is exposed to a nutrition education program, he has already developed food selection patterns which are important to him. Some of these patterns will be good; some may be poor. It is unrealistic to assume that he will be motivated to change the poor patterns because he is told he ought to do so.

When a fourth grade youngster was asked what she had learned about food she wrote, "Food is a needed thing. Many people are in need of food. We could not live without food. You should eat foods you do not like because they are good for you. You should not eat much candy. Bubble gum has more sugar in it than chewing gum." When pressed a little further she stated, "You should eat a total breakfast." Her reply to "What is a total breakfast?" was, "I don't know." These answers suggest that the nutrition education to which this child has thus far been exposed has had little or no impact upon her food choice. She has a rather vague idea that food is important to people but not specifically to her.

---

[1] Davis, Clara M. "Self-Selection of Diet in Newly Weaned Infants." Am. J. Dis. Children, 36, 651, 1928.

She does not view nutrition as a positive force. These answers are unfortunately characteristic of both children and adults. All too often nutrition has been taught in terms of didactic generalizations - this is good for you whether you enjoy it or not, this is bad for you and you should not eat it even though you like it. Is milk always 'good' for the child? Are sweets always 'bad'? Each foodstuff contributes certain nutrients to the body and that the beneficial or harmful effects can only be judged in terms of the total food intake in relation to the individual's needs.

How could the teacher of the fourth grade girl interest that child and her classmates in nutrition? In discussion the teacher and children could develop a menu for a child like themselves which would incorporate the recommendations in their health book. Then they might compare what they themselves ate over a 24 hour period with the menu they planned. The youngsters could then discover for themselves where their own food patterns agreed with and differed from the menu they developed. The skillful teacher could direct the children in the development of projects centered about food choice.

Food practices are personal and should be respected. There is no one eating pattern which is "right." The important feature of a good breakfast is not that it contains 1 egg, 2 slices of toast with butter, an orange, and a glass of milk, but rather that it supplies energy, protein, and a proportion of the total nutrient needs for the day. A breakfast consisting of a tuna fish salad sandwich and cocoa could filfill this purpose as well. The body does not require a serving of citrus fruit or juice for breakfast, but rather a certain quantity of ascorbic acid some time during the day. A helping of cabbage salad or broccoli could supply this need. Standard meal patterns have been developed because they are useful devices for demonstrating how nutrient needs might be met. Adherence to a standard pattern is not a sine qua non of good nutrition. The quality of the diet is not dependent upon eating certain individual foods in large amounts. Body needs can be furnished by combinations of well-chosen varieties of foods.

Projects centering about the foods that boys and girls in other countries might eat could be developed by the social studies teacher in cooperation with school lunch personnel. These would serve to illustrate that there are many different dietary patterns by which children can get the nutrients they need. Such units might also be helpful as a means of introducing new foods to the children or of demonstrating different ways in which a familiar food may be prepared.

C. Responsibility in Meeting the Nutritional Needs of Children

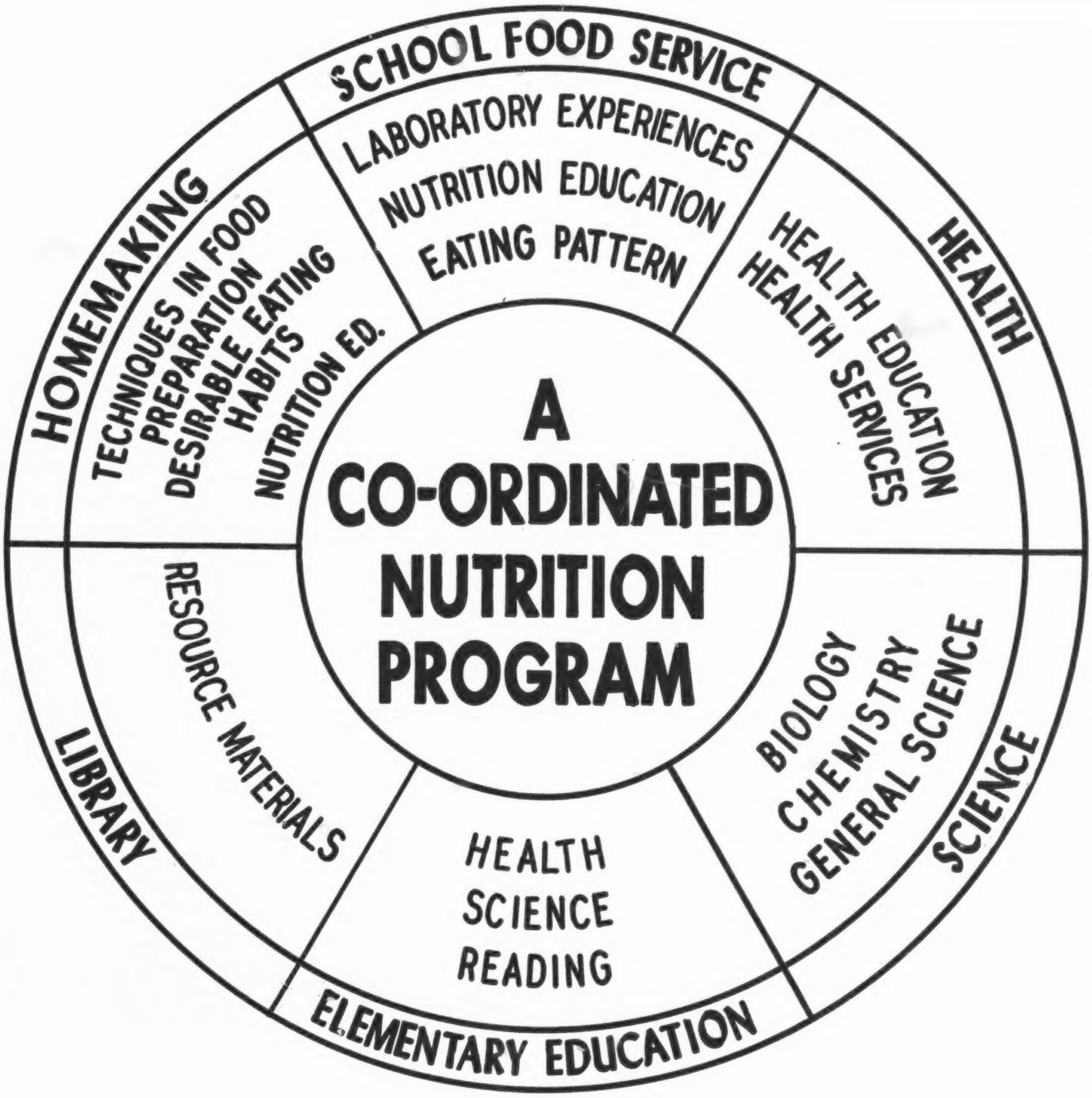
The nutritional needs of children have been defined in terms of the quantities of specific nutrients recommended for the maintenance of good health. These needs do not change qualitatively as the child matures, but they do change quantitatively. The child of 10 needs calories; the child of 16 needs calories. The number of calories needed by each, however, varies.

Food selection is basic to meeting nutritional needs. Food consumption is the means through which nutrients are provided for body processes.

It is the responsibility of the educational program to provide the child with the opportunity to learn how to select foods of the quality and quantity appropriate to his needs. These learning experiences should be positive and should permit active involvement for the child.

It is the responsibility of the family primarily and of the school at lunch time to feed the child.

The ultimate responsibility for meeting nutritional needs rests with the child himself. It is not the food on the plate which his body uses; it is the food in his stomach.


SCHOOL FOOD SERVICE
LABORATORY EXPERIENCES
NUTRITION EDUCATION
EATING PATTERN
HEALTH
HEALTH EDUCATION
HEALTH SERVICES
SCIENCE
BIOLOGY
CHEMISTRY
GENERAL SCIENCE
ELEMENTARY EDUCATION
HEALTH
SCIENCE
READING
LIBRARY
RESOURCE MATERIALS
HOMEMAKING
TECHNIQUES IN FOOD PREPARATION
DESIRABLE EATING HABITS
NUTRITION ED.
A CO-ORDINATED NUTRITION PROGRAM

CHAPTER IV

A COORDINATED NUTRITION EDUCATION PROGRAM

A coordinated nutrition education program starts with the child and his needs; but the support and interest of the administrator is a vital element in inaugurating a school-wide program and contributes greatly to its success. If he encourages the school to develop such a program, it is easier to secure the interest, enthusiasm, and co-operation of all staff members.

While the ultimate responsibility for teaching nutrition education will rest with classroom teachers, it is important to have a key person who will be responsible for developing and coordinating the program. This person must be enthusiastic and have an adequate background in nutrition information. He should be able to work with teachers, children, and others interested in developing the program. A home economics teacher, a professional school food service director, a science or health teacher, the school nurse or the school physician who has a keen interest in such a program could serve as the key person.

When the person who will coordinate the program has been selected, the curriculum areas should be surveyed to determine how nutrition education can fit into the various curriculum areas. Some of the subject matter currently being taught might be integrated with the nutrition education program such as:

SCIENCES

The understanding of today's science creates an improved food pattern.

BIOLOGY

Correlation of plant and animal growth studies in relation to foods used.

CHEMISTRY

Chemical composition of foods.
Utilization of foods by the body.

GENERAL SCIENCE

Conducts surveys of eating habits.
Encourages good eating habits.

HOME ECONOMICS

Re-emphasizes nutritional needs.
Teaches food nutrients and their contribution to the growth and development of the body.
Teaches the ultimate benefits of good nutrition
- Vitality
- Attractiveness of figure
- Attractiveness of skin, nails, hair

Introduces a variety of foods which provide the nutrients needed.
Helps the individual to overcome poor food habits.
Teaches menu planning based on nutritional adequacy.
Develops an awareness of good nutrition by presenting assembly programs and bulletin board displays.

HEALTH EDUCATION

Teaches nutrition and physical fitness.
Develops an understanding of food value in reference to vitality, attractiveness and physique.
Discovers nutritional inadequacy and refers said cases to nurse or doctor.

ELEMENTARY EDUCATION

Introduces a variety of foods.
- Tasting parties

Organizes nutrition studies through classroom projects.
- Plant and animal growth
- Poster work
- Simple food preparation

Expands nutrition studies by outside projects.
- Field trips
- Home gardens
- Feeding of pets

SCHOOL FOOD SERVICES PROGRAM

An area which should not be overlooked in developing the program is the food service department in the school. While the skill to choose a well-balanced diet is developed through knowledge, the school food service department has a big contribution to make in developing habits of eating based on good nutritional principles. Children learn by doing, and if good Type A lunches are served each day and the children are encouraged to eat these lunches, habits of good eating can be developed. The "Type A" lunch provides a balanced meal pattern. If on the spot nutrition "advertisement" was used, the student could be made aware of the correlation between nutritional instruction in the classroom and the food served in the lunch program. The food service department can cooperate with classroom teachers in preparing and introducing new foods in a "tasting party." This could be most worthwhile in developing food acceptance.

The school system that employs a professional school food service director has a valuable asset to a nutrition education program that is not always utilized to the fullest. The School Food Service Director is an individual who knows and understands the nutritional requirements of the body and the foods which will meet those requirements. One of the responsibilities of this person is to plan school lunches to meet the needs of boys and girls. If a school is interested in developing a coordinated nutrition program, here is an individual who has knowledge to work with the school physician, the school nurse, and the dental hygienist, as well as the instructional staff, to develop such a program. With this background in nutrition and contact with new research in the nutritional field, he is in a unique position to give leadership to the team who is providing both general and specific knowledge in regard to proper diet. Through his position in the school food service program, he can make available the practical experience which correlates the nutrition education program of the classroom with the "Type A" pattern served in the school food service department.

HEALTH SERVICES

The school nurse, school physician, dental hygienist, and school dentist should be included from the inception of the program. This group through their periodic examinations of the pupils see the evidences of poor nutrition in individuals. They have a keen interest in helping children overcome deficiencies which exist and share the goal of developing good food habits. They can make a contribution to the over-all program in the following ways:

Referral agency on selecting children in need of an adequate lunch.
Counselling agency with parents and pupils on nutritional inadequacy.
Participating in teaching some phases of the program.
Assisting in making pupils aware of the need of good nutrition.

LIBRARY

All members of the teaching team will have need of resource materials. The library should have materials available for teachers and students. The librarian should alert the teacher to new materials which become available. Displays of nutrition information in the library would serve to call attention to books and pamphlets which can be used.

CHAPTER V

PROGRAMS IN ACTION

It is not possible to include descriptions of the large number of nutrition education programs which are to be found in schools throughout Pennsylvania. The committee preparing this bulletin has attempted to give suggestions which can serve as a guide for those interested in starting a program.

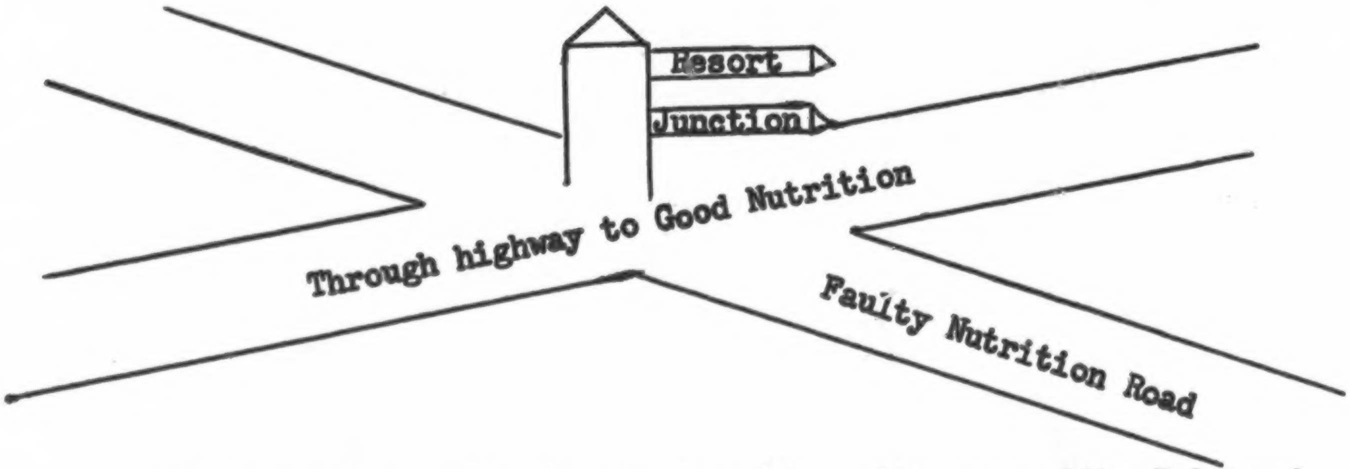
Included are examples of elementary, secondary and total school programs. Space does not permit giving all details regarding each of them.

ELEMENTARY

The following is a nutrition lesson taught to sixth graders by the school food service manager.

Sixth Grade Nutrition Lesson

Let's go on a trip today!! Instead of a real trip, let's go on an imaginary trip and instead of going to another state like New Jersey or California, let's go to the State of Good Nutrition. In order to get there, we must follow the right road and watch for the right signs.



The road signs point in one direction with names like Balanced Meal Resort and Vitamin Junction and in the other direction the signs read Detour — Food Notions, Dead End — Poor Appetite, etc. Since we want to go to Good Nutrition State, which signs would you follow? (Have class make up names for other signs.)

The car you are going to ride in is your very own and it's built especially for you. Instead of a Ford or a Cadillac, it is called Johnny Jones or Mary Smith and you have to use special gas known as the "Basic 4." You use one or more tanks of this gas every day, depending on how active you are but the least you will need for the journey every day is as follows:

Milk group - 3 to 4 cups
Vegetable - fruit group - 4 or more servings
Meat group - 2 or more servings
Bread - cereal group - 4 or more servings

Plus other foods as needed to complete meal and
to provide additional food energy.

What foods would belong to each of these? (Name some foods in each group.) Now if we eat three meals a day, we should eat about 1/3 the amount at each meal so at lunch time in school we are told we should eat certain amounts of these foods. This lunch is called a Type A Lunch and here is the pattern to follow which gives us the right gasoline for our car on the journey to Good Nutrition.

2 oz. protein - meat, fish, cheese, peanut butter,
egg, dried beans

3/4 cup vegetables and/or fruits including juices

2 teaspoons butter

1 serving enriched bread or muffin

1/2 pint whole milk

Sometimes we say we've eaten a "square meal." Imagine what a square meal would look like. Do you think your lunch at school was a square one today? It would not be unless you ate all of it because the pattern looks like this:

Milk	Vegetables and Fruits
Bread and Cereal	Meat and Eggs

How will you know if you get to the State of Good Nutrition? What are the signs you look for? Each one of these foods provides some special requirement of our bodies. Milk, for instance, is a protective food - it furnishes minerals like calcium for strong bones and teeth.

Now what about the other food groups? Can you tell me what they furnish our bodies on the journey to Good Nutrition? (Have children take each food group and name some foods in each one and tell what they do for the body.) Suppose we eat all these foods? What effects would we see in our bodies to show us that we are on the right road to Good Nutrition?

Have children name signs such as:

bright eyes
clear skin
shiny hair
strong bones
good teeth
happy disposition
pep and energy
good posture

If we see all these signs we can feel pretty sure that we have reached our destination or are surely on the way. And what are the advantages of living in this state? (Have the children mention advantages.) You can sum up for them as follows:

Good personal appearance
Better grades in school
More friends
Greater skill in athletics
Happier family relations, etc.

Now we see why it is important to eat all of our Type A Lunch at school and why we should eat three square meals each day in order to have all the Basic 4 foods and not just part of them. If you would like to check up on yourselves, why not keep a notebook and write down all the foods you eat at each meal and see how you rate at the end of a week. See if you are using the right gas for your car on the road to Good Nutrition.

Nutrition and Public Relations Project

This project was the outgrowth of a unit on Health and Science in the sixth grade. The class expressed an interest in their school lunches and requested the cooperation of the school food service director.

The first discussion brought many questions. The class decided to form committees to investigate the following areas of the lunch program: nutritive value, costs, equipment, methods of preparation, and individual likes and dislikes. They planned a typical school lunch for one day and used this lunch as a basis for their work.

The committees set up the following outline:

Selected a menu that the majority of the people like
Checked food values for a balanced lunch
Checked "appetizing" appeal
Considered the cost of food in the menu
Source of the food
How is the food prepared
Quantities of food prepared
Equipment used

The culmination of the project was an invitation to the parents to come to lunch the day "their menu" was served. Both fathers and mothers accepted invitations to lunch and to see the little play the children had written about the work they had done.

Later the class had a tasting smorgasbord to which they invited representatives of the other 6th grades. This food included characteristic dishes of the nationalities represented in the group.

The children worked with the school food service employees. They had access to bills showing cost of food and equipment, and they wrote to companies for information. The interest in and understanding of the nutritional value of the lunch program which resulted was most gratifying.

SECONDARY

A Senior High School Program

It is a well-known fact that the senior high age group has many faulty food habits. This becomes particularly noticeable among girls who are especially weight conscious. In an attempt to have a slim figure, they frequently omit many nutritive foods from their diet. During this same age span the teen-age boys develop a ravaging appetite that accompanies growth. A constant craving for food often leads boys to consume foods that are already prepared and can be devoured in one or two bites. Most of these foods contain "empty calories" which provide little nutritive value, yet they satisfy their immediate hunger.

Finding this to be a major concern among parents, the school nurse, the school physician, and teachers, it was felt that a united effort might best meet this problem. A program was designed to:

.create an awareness of good nutrition among the senior high school students

.alert parents in the community of their part in providing teen-agers with well-balanced diets

.encourage a better daily diet among teen-agers

A logical first step was to involve the youth and attempt to develop a consciousness of poor eating habits.

It was suggested by the homemaking teacher, school nurse and health teacher that a 24 hour dietary recall be administered in the senior high health class.

The recalls were evaluated by the students to detect the actual food intake of the student body. After these findings were evaluated, a representative from each school club was selected to participate in a demonstration group coordinated by the homemaking teacher.

The demonstration group met to discuss ways to present these findings in an interesting manner, noting that the food value demand will vary with each individual. The importance of the basic foods were stressed to these representatives in regard to the physical well-being of a teen-ager.

In turn, the group decided that each club representative could demonstrate to his organization an illustration of well-balanced and improper dietary recall. The group believed that demonstration with actual foods would portray this and bring about a better understanding of good food choices. Members of the demonstration group contacted civic groups to secure money to pay for food costs. This was selected as a method of acquainting parents in the community with the need to improve teen-age nutrition.

The food demonstrations presented by the representatives resulted in a request for further nutritional information. The demonstrators prepared visual talks designed to interest their own specific club in the basic foods. Continued lunchroom observation by selected members of the demonstration group indicated an improved choice of foods during the lunch period.

Interest aroused in the project brought a request from parents for help in determining ways they could fulfill their responsibility to teen-agers in providing good diets. A check list was developed to evaluate the daily food intake of the teen-agers for meals served at home.

The project was a distinct benefit to the teen-agers, parents, and teachers in making them more conscious of daily food requirements.

COOPERATIVE PROJECT BETWEEN SECONDARY AND ELEMENTARY

A Nutrition Experiment in the Elementary School

The 11th and 12th grade vocational girls taught nutrition in first and second grade. The unit consisted of five lessons, presented one period a week, for a period of five weeks. Four rooms were involved. Three girls were limited to one room during this period. It did not seem wise to rotate the group of girls and thus subject the elementary students to so many strange teachers.

The titles of the five lessons were as follows:

No. 1 - "Good Morning. Did You Eat A Good Breakfast?"
No. 2 - "Eating Her Curds and Whey"
No. 3 - "An Apple A Day"
No. 4 - "And You Shall Have No Pie"
No. 5 - "Sugar N' Spice N' Everything Nice"

Lesson One: "Good Morning. Did You Eat A Good Breakfast?"

OBJECTIVES

- To decide why many individuals skip breakfast
- To explain the typical breakfast pattern
- To suggest unusual foods that may be eaten for breakfast
- To prove that breakfast preparation need not take too much time

SUGGESTED ACTIVITIES

- Introduce lesson with record of "Lazy Mary, Will You Get Up?"
- followed by discussion on "Why we don't always feel like eating in the morning."
- Show a film strip entitled "Skimpy and A Good Breakfast." Very colorful little puppets tell the breakfast story so well. Available free of charge from Cereal Institute Co.
- Posters displaying colorful pictures of foods that may be eaten for breakfast.
- Display of grains. Children tell class the cereals made from the various grains.
- Comparing a light, medium, and heavy breakfast.
- A pupil prepares a simple breakfast in the classroom.
- Several pupils volunteer to tell what they ate that morning for breakfast.
- Surprise! Juice and muffins served at the conclusion of the lesson.

Lesson Two: "Eating Her Curds and Whey"

OBJECTIVES

- To discourage coffee drinkers in the various rooms
- To explain the function of milk as a contribution to the daily diet
- To exhibit the available forms of milk and compute the cost of each
- To display foods that are rich in the equivalent of milk in nutritional values
- To show what milk dishes may be consumed in addition to the drinking of milk as a beverage

SUGGESTED ACTIVITIES

- Introduce the lesson with:

  a. A life-size doll representing the human body and discuss the importance of milk as the baby's first food.
  b. Show a model Holstein Dairy as a symbol of the animal which is responsible for the "almost perfect" food.
  c. A high school student dressed to represent "Little Miss Muffet" who recited the nursery rhyme—"Little Miss Muffet."

- Display of the following: a quart of raw milk, a quart of pasteurized milk, a quart of homogenized milk, a quart of evaporated milk (diluted), a quart of powdered milk after water has been added. Discuss the differences.
- Comparison of certain foods that are equivalent in calcium to one glass of milk -

7 lbs. potatoes	10 eggs
7 oranges	2 lbs. cabbage
	2 lbs. carrots

The display of these actual foods are especially effective.

- Display of menu items made with milk such as creamed chipped beef, cottage cheese, salad, and cream soup.
- A quart of milk drawn on a chart to show the percentage of the constitutents. Discussion of the importance of milk for the growing child.

Lesson Three: "An Apple A Day"

OBJECTIVES

- To stress how we might get the necessary vitamins and minerals from natural foods
- To teach the parts of the vegetable plant that are edible

- To develop interest in the eating of raw fruits and vegetables
- To dramatize how we look and feel when we fail to eat fruits and vegetables every day

SUGGESTED ACTIVITIES

- Display vitamins and minerals, pills and capsules and compare them to fresh fruits and vegetables that supply us with the identical food essentials
- Present a skit entitled "To Market, To Market, To Buy Food"
- Prepare a chart with cut-out trees, bushes, and vines. Attach outlines of fruits to the source from which they grow

ACTUAL CLASSROOM EXPERIENCES

- Because guessing games hold a certain fascination, we played the following. The high school girls would mention the part of the plant such as root, stem, leaf, flower, etc., and the pupils would respond with turnips, celery, lettuce, cauliflower, etc.
- In one room we held a carrot party. A special guest was invited - a large tame white rabbit, who performed quite well in teaching how to chew small bites thoroughly.
- One group prepared raw vegetables cut in various shapes. They blindfolded pupils who volunteered to select, eat, and identify the vegetables. They found they could enjoy eating turnips, parsnips, and cauliflower in the raw state as well as the more familiar carrots, celery, and cucumbers.
- To capture the interest of the group, one student introduced the lesson by asking the first graders to guess the number of dried beans in a jar. The pupil who guessed most nearly correct was given a bag of apples - much to his surprise.

Lesson Four: "And You Shall Have No Pie"

OBJECTIVES

- To present many good reasons why we should eat a well-balanced diet every day
- To teach the basic four group
- To encourage the habit of eating whatever foods are served in the school lunch as well as the home

SUGGESTED ACTIVITIES

- Make a version of the chart "Foodway to Health" showing the basic four groups
- Dramatize a restaurant scene whereby a child orders incorrectly. The mother tries to set a good example by ordering a well-balanced meal and at the same time persuades him to make another choice.

ACTUAL CLASSROOM EXPERIENCES

- A puppet looked over the shoulder of the poor eaters and reminded them what they should eat. Information was provided in advance by the elementary teachers.
- A group presented an original skit. One enacted the role of the daughter who went shopping for groceries and made very poor choices. The mother scolds her for her extravagant spending.
- Buttons were awarded to the boys and girls who made a habit of cleaning up their plates in the cafeteria.
- Pupils were asked to make a poster depicting something they had learned in previous lessons. Prizes were awarded on the day of the final lesson. The art teacher supervised this project.

Lesson Five: "Sugar N' Spice N' Everything Nice"

OBJECTIVES

- To discover what snacks youngsters usually eat between meals
- To recommend the best foods for "in-between-meals"
- To discuss the harmful effects of poorly chosen snacks

SUGGESTED ACTIVITIES

- Post pictures showing unusual snacks, and light and heavy snacks
- Conduct a "Man-on-the-Street" interview and ask the passerbys what snacks they prefer
- Prepare a menu from examples of interesting snack-combinations and distribute to the class
- Prepare a platter of assorted foods to be eaten as snacks and serve to various groups

Benefits of an Elementary Nutrition Experience to the Elementary Pupil

- They have become more aware of the facts related to nutrition although many food habits originate in the home, this age child is able to make it an easier adjustment
- This gave them a new experience with food
- The children listened more intently to those who were nearer their own age and to those who were best able to speak at their level
- There were grade school teachers who made this experience more effective by a "follow-up" of their own teaching
- The teaching of nutrition with the beginners was started

TOTAL SCHOOL PROJECT

A District Food Service and Nutrition Education Program

A more extensive program in nutrition education might involve the total school district. A program of this type was organized and carried out effectively in a school district with a student population of 10,000. A total school district committee was organized and nutrition education was introduced in all curriculum areas. A brief description of the project follows which shows committee membership, functions of the committee, and some program activities.

A Nutrition Education Committee

The following were appointed as members of the district committee:

- Director of Curriculum
- Director of Food Services
- Chairman, Food Services Committee
  Board of School Directors
- Principal
- President, Parent Council
- Director of Art Education
- Director of Audio-Visual Education
- Health Task Force
- Teachers
- President, Student Council

The prime functions of the district nutrition education committee were policy making, organization and curriculum development, agency coordination and guidance.

Meetings

Committee meetings were held at least three times each year to review, study, and plan for projects under consideration.

Function of Committee Members

Director of Curriculum

It was the function of the Director of Curriculum to promote and to coordinate nutrition education with all other curriculum areas and to guide and assist principals, department heads, and teachers in their efforts to provide a meaningful program.

Director of Food Services

It was the function of the Director of Food Services to coordinate the program of food services with all other departments in the district. The duties of the director were:

> To provide nutrition instruction for all school food service personnel as part of regular in-service training. Such training will alert employees to the importance of recognizing a balanced diet; of preparing balanced meals; and of cooperating with teachers in the effort to further nutrition education;
>
> To secure and furnish timely and appropriate resource materials for use by teachers and food service personnel;
>
> To act as resource person for supervisors, principals, teachers, parent groups and food service personnel;
>
> To keep up-to-date in current trends of food service and nutrition research;
>
> To report to the superintendent and board of school directors on projects as requested.

Board of School Directors

The Chairman of the Food Service Committee of the Board gained knowledge and understanding which fostered administration policies that will enhance the food services and nutrition education program.

The Principal

As the administrative head of the school, the principal coordinated the food services and nutrition education program with all school and community programs and agencies.

As the educational leader of the school, he inspired cooperative effort within the faculty to promote nutrition education.

Parent Council

The representative of the Parent Council contributed the parent's point of view. She returned to parent groups with knowledge gained of the importance of the ALL DAY balanced diet and of the real need of close cooperation between home and school in the nutrition education of children.

Art Education

The Director of Art worked with teachers to promote the use of specially prepared posters; art work on district menus; timely decorations; and coordination of art instruction with other areas of learning.

Audio-Visual Instruction

The Director of Audio-Visual Instruction provided appropriate film strips, slides, books, and other materials on request and taught the skills of projecting learning.

The Health Task Force

The nurse, guidance counselor, dietitian or food service manager, physical education and home economics teachers constituted an important task force in the health and nutrition education program. Through investigation they discovered illness, post-operative weakness, as well as problems of attitude, posture and malnutrition. Through tailored programs of instruction they taught children to recognize and select a balanced diet.

By maintaining records and intercommunication with the doctor, the family, the dietitian or food service manager, individual assistance such as free food, special diets, and other health helps were provided.

As specialists and resource persons, the team contributed to parent council meetings, faculty meetings, student conferences, classroom instruction, and as advisors in individual cases.

Student Council Representative

The student council representative provided liaison between the district committee and the student body. By virtue of his position he presented to the committee the student's viewpoint and guided and inspired student cooperation and participation in the program.

Program Ideas

The program of nutrition education was originated through cooperation of the Superintendent with co-chairmen. A few of the interesting ideas that were a part of the project follow:

- Workshops on nutrition held for Food Service personnel and home economics teachers.

- Elementary class projects which stressed nutrition and involved related subjects.

- An active interest in planning menus
    - Menus were made by committees of food service managers and a class of students - Managers' names and school are imprinted.
    - Menus carry poem or ditty on nutrition information with art illustration. Child contributor's name and school imprinted.

COOPERATIVE PROJECT - HOMEMAKING TEACHER AND GRADE TEACHER WORK TOGETHER

In a large city school system several homemaking teachers are assigned to elementary schools having grades seven and eight. When time on their schedules permit, these teachers provide a program in family living from kindergarten to grade six. The teacher and her class may come to the homemaking room or the homemaking teacher may visit the classroom. One of the most popular experience areas is in food and nutrition.

OBJECTIVES

To help children acquire a good attitude toward the home and family - a willingness and a desire to share in the responsibilities and privileges of home and family living.

To help them acquire skills, commensurate with their ages, in the performance of some household tasks.

To help them form good health habits.

To make them aware of their food needs and encourage them to form good dietary habits and to develop a liking for the foods they need.

TOPICS FOR STUDY

Daily food needs - four major food groups
Preparation and serving of simple foods - breakfast, snacks
Food used by people of other countries
Handling food in the market and at home
Importance of three meals a day
Lunch at school

EXAMPLES OF EXPERIENCES

A Kindergarten Class

The homemaking teacher and the kindergarten teacher took the class to a neighborhood market. Their attention was called to the great variety of foods, to the color, and attractiveness. Familiar foods were identified. Foods new to some were introduced. Fresh young carrots and some apples were purchased and taken back to the classroom. The children prepared carrot sticks and apple wedges to serve as a snack with a glass of milk.

Grade Two - A TV Snack

The grade teacher and her class came to the homemaking department. In each kitchen unit an eighth-grade girl served as leader of five or six second graders.

The group reviewed the four basic food groups and noted the fruit and vegetable group particularly. Today they would prepare a TV snack and that snack would consist of a serving of tomato juice and four other vegetables. When their trays were ready they would go into the living room, sit on the rug, and "watch TV." At a long, low "supply table" at the front of the room, a supply of ten different vegetables was arranged on trays, namely, a pitcher of tomato juice, carrot strips, cauliflower segments, celery, lettuce leaves, young spinich leaves, green pepper strips, yellow turnip strips, potato chips, and sliced pickled beets. Each child helped himself to a glass of tomato juice and chose four different vegetables from the display. They had truly seen "TV" - ten vegetables. The snack party in the living room was in itself an experience. They compared their selection with others. They discovered some trays were more attractive than others and that some selections were more nutritious than others.

DIETARY COUNSELING PROGRAM

In one Pennsylvania county over a period of years, homemaking teachers, assisted by Pennsylvania Department of Health Nutritionists, conducted a program of individual dietary counseling with pre-school children and their parents. Local doctors and dentists participated in meetings to discuss health and dental questions.

The program started with a few experimental situations and grew to include at one time all schools in the county. It was organized and directed by the Area Supervisor of Home Economics Education.

The counseling session was held in connection with the county-wide pre-school clinic program conducted each spring. The total program was sponsored by the County Schools Office.

Much of the effectiveness of the program was due to the fact that in each center the principal, elementary teachers, school nurse, special education supervisor, homemaking teacher, and area homemaking supervisor all worked together.

Purpose

The over-all purpose of the program was four-fold:

- To learn the eating habits of pre-school children and their families.
- To discover special dietary problems and needs.
- To give some on-the-spot help.
- To define, by school communities, some nutritional needs which could form the basis for instructional activities in this area.

Counseling

As a counseling day progressed, the homemaking teacher and/or nutritionist talked individually with each pre-school child and his mother to learn eating habits, diet and other problems, check on general nutritional status and to advise on special problems which were found.

The problems usually included such matters as not eating breakfast, dislike of some foods, inadequate amounts of milk, and poor teeth. Counselors explained points which included the following - importance of eating a good breakfast, ways to interest children in drinking milk and eating a variety of foods, recipes for new dishes, how to make food dollars cover basic needs, the need for establishing routine in the home for regular meals, and the importance of working with the family doctor and dentist as needs indicated.

Any serious physical or family problems discovered through the parent conferences were reported to the school nurse or other proper person.

Guide Sheet

A check which served to guide the conference and to record the findings for each child was used by the counselor. It covered the following points - age, height, and weight of child, breakfast score, amount of milk, likes and dislikes of fruits, green vegetables, yellow vegetables, meats, eggs and cheese, general health and nutritional status including condition of teeth, special problems and types of help given.

When the work was completed, the information was summarized by districts and then for the county, and copies were made available to all participating districts.

The check sheets remained in the district for reference.

A county summary one year revealed the following information:

STATISTICAL SUMMARY

Report of Dietary Conference

County Pre-School Children

Number of school centers	18
Total number of individual conferences	863
Percent of children having a good breakfast	21.2
Percent of children having a fair breakfast	45.5
Percent of children having a poor breakfast	29.08
Percent of children having one quart of milk daily	4.1
Percent of children having one pint of milk daily	34.2
Percent of children having one-half pint of milk daily	11.7
Percent of children having no milk daily	.023
Percent of children liking all fruits	44.03
Percent of children liking some fruits	55.8
Percent of children liking no fruits	.001
Percent of children liking all green vegetables	15.9
Percent of children liking some green vegetables	83.7
Percent of children liking no green vegetables	.002
Percent of children liking all yellow vegetables	17.1
Percent of children liking some yellow vegetables	82.7
Percent of children liking no yellow vegetables	.001
Percent of children liking all meats	72.1
Percent of children liking only certain meats	27.9
Percent of children liking no meats	00.0
Percent of children liking liver	64.4
Percent of children liking cheese	87.2

Some Results

It follows naturally that each year, as a result of these conferences with parents and children, homemaking teachers and elementary teachers would see new implications for their programs.

As a result, homemaking programs were planned to include a new emphasis in food classes, demonstrations for mothers of first grade pupils, more help to elementary teachers, demonstrations by homemaking students on milk, vegetables and fruit in the elementary grades, and more home experiences centered about helping younger brothers and sisters to enjoy milk and a wider variety of foods.

In the elementary school program, units were enlarged or revised to interest children in drinking milk, eating green and yellow vegetables and caring for their teeth. There were more trips to farms, dairy barns, commercial dairies, and more correlations with English, art, and arithmetic.

RESOURCE MATERIALS

CHAPTER VI

It is important that when a school develops a nutrition education program, it becomes aware of the many resources which are available within the school and in the community.

Resource persons within the school

There are persons on the school staff who can give assistance to a teacher when she is planning and teaching a nutrition education program. Some of these persons can help with activities, such as serving as a member of a teaching team, or providing curriculum materials. The following list will suggest some of the persons available and their role in a program.

- Home Economics Teacher

  Develops a nutrition program
  Teaches a unit in nutrition
  Serves as a source of current information developments in the field of nutrition
  Gives aid in helping students plan nutritious menus
  Works with students in preparing nutritious foods
  Correlates units on marketing, proper storage and preparation to retain nutritive content of foods
  Guides students in selection of "snacks"

- School Lunch Supervisor and/or Manager

  Provides nutritious, attractive, palatable lunch daily
  Provides pleasant dining atmosphere
  Provides "tasting parties" of new or unusual foods
  Provides tour of food preparation areas
  Works with classroom teacher and administrator in showing how program is correlated with other educational areas
  Works with PTA to provide parents and the public with nutrition education
  Works with school lunch personnel to show their part in promoting good nutrition

- School Nurse and Health Teacher

  School Nurse
    Works with others in determining areas where nutrition information is needed

Aids teachers in coordinating health and nutrition education
Works with students, parents, and school lunch manager on individual nutritional problems

Health Teacher
Serves as a resource person for elementary teachers
Works with School Lunch Supervisor in correlating school lunch and health of students
Assists in a program of nutrition education

- School Librarian

  Provides resource material and information on nutrition to teachers and students
  Provides resource information on how to set up a visual display
  Includes in the library, books on health and nutrition suitable for parents

- School Physician

  As medical adviser:

  Provides a clinical appraisal of the nutritional status of each child examined; if the status is poor or marginal, the physician should review the child's dietary habits and past medical history in an attempt to discover and correct the cause.

  Available for group conferences. Although it is not the physician's function to replace the teacher, an occasional meeting with a problem group may supplement and strengthen classroom teaching in nutrition; e.g. adolescent girls whose exaggerated emphasis on slenderness motivates them to skip breakfast and to attempt to subsist on "fad" diets.

- Resource persons within the Community

  Communities are rich in human resources which could be used by schools in a nutrition education program. The number and type of persons available would differ in each community. Some will work as individuals while others will work as organized groups.

- Parent Teachers Organization

  Stress the importance of parental cooperation in developing good nutrition habits
  Help in displaying a wholesome attitude towards all foods

Encourage their children to become acquainted with all foods
Serve nutritionally sound meals
Understand nutrition goals planned by education and health workers
Support the school food service program
Use home experiences to teach the child about food
Help the child understand that all people need good meals, but some needs may be different for other members of the family
Give special attention to nutritious snacks and foods children purchase on their own
Emphasize relation between nutrition and mental development and ability

- Dentists

Correlates good nutrition with good dental health
Keeps public and professionals informed of new developments in health and nutrition fields

- Hospital Dietitian

Serves as a resource person for nutrition education in the community. Is a good source of information on special diets.

- Public Health Nutritionist

Provides information about the health program in the community
Suggests and cooperates in home-school project in areas where the community as a whole can benefit from changes in food patterns
Recommends and provides visual aids, films and nutrition information and books
Acts as a link in exchange of nutrition information between medical people and professional and non-professional public

- State and Federal School Food Service Personnel

Suggest resource material, visual aids to be used in a specific nutrition program
Coordinate school and community nutrition program
Interpret the role of state and federal agencies in nutrition programs

Home Economics Extension

Provide nutrition information and materials
Has the opportunity to work with the entire family
Utilize the services of the state extension nutrition specialist

Resource Materials

There is an abundance of printed resource material available for nutrition education programs. Listed below are some suggested references which members of the committee have found to be helpful.

Books:

NUTRITION AND DIET THERAPY
Proudfit, Robinson
McMillan, 12th Edition
60 Fifth Avenue, New York 11, N.Y.

NUTRITION EDUCATION IN ACTION
Ethel Austin Martin
Holt, Rinehart and Winston
New York, Chicago, San Francisco

EXPERIENCES WITH FOODS
L. Belle Pollard
Ginn and Company
Boston, New York, Chicago

FOOD BECOMES YOU
R. M. Leverton
Doubleday Company
Garden City, N.Y.

Other Publications:

Harvard School of Public Health
695 Huntington Avenue
Boston, Massachusetts

LET'S TEACH BETTER NUTRITION
Eugenia Whitehead, D. Sc.
Helen S. Lockhart, Ed. M.
Frederic J. Stare, M.D.

Nutrition Foundation, Inc.
99 Park Avenue
New York 16, N.Y.

THE ROLE OF NUTRITION EDUCATION IN COMBATING FOOD FADS

GOALS FOR NUTRITION EDUCATION
Elementary and Secondary Schools

NUTRITION EDUCATION RESOURCES FOR SCHOOLS

ACTIVITIES IN NUTRITION EDUCATION
Kindergarten Through Sixth Grade

Public Affairs Pamphlets
22 East 38th Street
New York 16, N.Y.

PERSONALITY "PLUS" THROUGH DIET
Foodlore for Teenagers

The American Dietetic Association
620 North Michigan Avenue
Chicago 11, Illinois

FOOD FACTS TALK BACK

THE BEST HEALTH TO YOU
Revised January, 1964

General Mills
Department of Public Service
Minneapolis 1, Minn.

TEACHER'S ACTIVITY BOOK
For a Program in Nutrition and Health

Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402

FOOD BUYING GUIDE
For Type A School Lunches
Pa-270, Revised January, 1964

PLANNING TYPE "A" LUNCHES
Pa-264, October, 1962

NUTRITION VALUE OF FOODS
Handbook #8

THE FOOD WE EAT #870

TYPE "A" PLATTER
Chart #512940

U. S. Department of Agriculture
Office of Information
Washington, D. C. 20250

PROGRAM NUTRITION NEWS
Mary M. Hill, Ed. D., Nutritionist
Consumer and Food Economics
Research Division

Bureau of Publications
Teachers College
Columbia University
New York, 1959

PROMISING PRACTICES IN NUTRITION
EDUCATION IN THE ELEMENTARY SCHOOL
Willard J. Jacobson
Fannie Lee Boyd
Mary M. Hill

BIBLIOGRAPHY

BOOKS

Leverton, Ruth.	Food Becomes You Doubleday Company, Garden City, N.J.
Martin, Ethel Austin.	Nutrition Education in Action Holt, Rinehart, and Winston, N.Y.
Pollard, L. Belle	Experiences with Food Ginn and Company, Boston, Mass.
Proudfit and Robinson	Nutrition and Diet Therapy 12th Edition, McMillan, N.Y.

Other

National Academy of Sciences...National Research Council, Washington, D. C.
Recommended Dietary Allowances

Davis, Clara M........Self Selection of Diet in Newly Weaned Infants,
American Journal Distrubed Children, 36, 651, 1928

United States Department of Agriculture, Washington, D. C.
Nutrition Program News

ACKNOWLEDGMENTS

The Department of Public Instruction expresses its appreciation to the persons listed below for their valuable assistance and cooperation in the preparation of this publication.

*Miss M. Esther Hill, Philadelphia

*Mrs. Elizabeth Lavelle, *Associate Professor of Home Economics,* Indiana State College

*Mrs. Margaret Minnick, McKeesport

*Miss Hester Munden, Pittsburgh

*Mrs. Edith E. Myers, Stoneboro

Miss Janice N. Neville, *Assistant Research, Professor of Nutrition,* University of Pittsburgh

*Mrs. Catherine B. Nichols, Upper Darby

*Mrs. Rosemarie Padden, Pittsburgh

*Mrs. Agnes C. Price, Williamsport

*Mrs. Corrine Robinson, *Professor of Home Economics,* Drexel Institute of Technology

*Mrs. Helen Swank, Palmyra

*Miss Violet Zimmerman, Reading

*Miss Dorothy Waller, Department of Health, Commonwealth of Pennsylvania

Miss Grace Woodward, Temple University, Philadelphia

The following staff members from the *Department of Public Instruction* gave assistance:

*Mildred Coyle

*Anne G. Eifler

*Clio S. Reinwald

---

* Members of state committee appointed to prepare this publication.

VT 002 023
Distributive Education for Adults, Selection and Training of Part-Time Instructors. Vocational Division Bulletin, no. 258. Distributive Education Series, no. 20.

Kneeland, Natalie
Office of Education, Washington, D.C.
OE-82002
Pub Date - 60
MF AVAILABLE IN VT-ERIC SET. 34p.

*PART TIME TEACHERS, *ADULT VOCATIONAL EDUCATION, *DISTRIBUTIVE EDUCATION, TEACHER RECRUITMENT, *TEACHER SELECTION, *TEACHER EDUCATION, PROGRAM GUIDES,

The purpose of this manual is to give practical suggestions on part-time instruction training and selection to those responsible for the supervision of the adult program. The main areas covered by the document are (1) The Job of Adult Training which discusses responsibility for adult training and conditions under which the part-time instructor works, (2) Recruitment and Selection of Part-Time Instructors which includes where and how to find them, qualifications to be met, and pointers on selection, (3) Training of Part-Time Instructors which covers kinds of training to offer, rules to follow, and individual and group teacher training, and (4) Evaluation of Selection and Training. Suggested ways of seeking out prospective instructors are to--(1) include inquiries about available adult instructors when making a survey, (2) publicize the need, (3) call upon the advisory committee, (4) offer supervisory courses to uncover talent, (5) build a reserve staff through group training, (6) discuss in conference meetings, (7) follow up leads, (8) build a directory of potential instructors, and (9) keep an up-to-date personnel file. This document is available for 25 cents from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. (MM)

VT 002 023

ED022065

OE-82002

DISTRIBUTIVE EDUCATION FOR ADULTS

SELECTION and TRAINING of Part-Time Instructors

VT02023

Office of Education

U. S. DE[illegible]RTMENT OF HEALTH, EDUCATION, AND WELFARE

Highlights

- *Adult training in distributive education is instruction given to persons employed in the distributive occupations to increase or extend their knowledge, skill, and ability to work effectively.*
- *By increasing the vocational competency of persons engaged in distributive occupations the entire process of distribution is improved.*
- *The part-time instructor serves most of the adult groups receiving training in this program.*
- *Unless the instructor is able to stimulate the group members to think constructively about their problems all the efforts of the school administrator, the local supervisor, and the coordinator will have come to naught.*

OE-82002

DISTRIBUTIVE EDUCATION FOR ADULTS

SELECTION and TRAINING of Part-Time Instructors

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Vocational Division Bulletin No. 258
Distributive Education Series No. 20

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Arthur S. Flemming, *Secretary*

Office of Education . . . . . . Lawrence G. Derthick, *Commissioner*

PRINTED 1955
REPRINTED 1960

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1960

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price 25 cents

Contents

Page

FOREWORD.. IV

THE JOB OF ADULT TRAINING......................... 1

Importance of Adult Training in Distributive Education... 1

Responsibility for Adult Training......................... 2

Conditions Under Which the Part-Time Instructor Teaches. 3

RECRUITMENT AND SELECTION OF PART-TIME INSTRUCTORS.. 5

Where and How To Find Instructors...................... 5

Qualifications To Be Met.................................. 7

Pointers on Selection...................................... 8

TRAINING OF PART-TIME INSTRUCTORS............ 11

The Teacher-Training Problem............................ 11

Individual Teacher Training............................... 13

Group Teacher Training................................... 20

Bibliography for Instructors............................... 22

EVALUATION OF SELECTION AND TRAINING......... 24

Points To Be Considered by the Supervisor or Coordinator.. 24

Evaluating Recruitment and Selection.................... 24

Evaluating Teacher Training............................... 25

Check on Selection and Training.......................... 26

Foreword

THE PART-TIME INSTRUCTOR of adult groups in distributive education brings to the program a wealth of occupational experience to share with others. The fact that he teaches on a part-time basis enables him to fit into the program when and where he is needed.

The problem of selecting and training these instructors continues to be important. This manual *Selection and Training of Part-Time Instructors of Distributive Education for Adults* gives practical suggestions on how the task may be carried out in an effective manner. It is primarily for the use of those responsible for the supervision of the adult program. A companion publication, *Guide for Part-Time Instructors,* is intended for the use of the instructor himself but should be used by the supervisor in training the instructor.

School administrators should find this manual of interest in that it gives an overall picture of the problem of selecting and training part-time instructors. Newly appointed supervisors of adult training will find it a useful guide. Experienced supervisors may wish to use it as a means of checking on their own procedures.

The *Guide for Part-Time Instructors* contains many helpful hints for the instructor in his new field of service. It sets forth in condensed, informal fashion, background information on teaching; the four steps in teaching; and final evaluation. While the *Guide* cannot take the place of training, it should aid materially in making the teaching job easier.

The information in both publications was drawn from a wide variety of sources, including many States operating successful extension programs. The project was carried out by Dr. Natalie Kneeland, Training Consultant, with the assistance of the following Program Specialists for Distributive Education, Division of Vocational Education, U. S. Office of Education: Donovan Armstrong, Clyde W. Humphrey, John B. Pope, and G. Henry Richert.

JAMES H. PEARSON
Assistant Commissioner
Division of Vocational Education

The Job of Adult Training

Importance of Adult Training in Distributive Education

WHAT IS ADULT TRAINING IN DISTRIBUTIVE EDUCATION?

Adult training in distributive education is instruction given to workers for the purpose of increasing or extending their knowledge, skill, and ability to work with people in the distributive occupations in which they are engaged.

Classes for adults may be held during working hours on the time of the employer or outside of working hours on the employee's time. They may be held any time of the day or evening.

WHY IS ADULT TRAINING IMPORTANT?

In increasing the vocational competency of adults engaged in distributive occupations the entire process of distribution is improved. The net result is beneficial to individual class members, to the distributive businesses which employ them, and to the local community.

The fact that training is offered on both employee and management levels brings about greater understanding and closer cooperation between management and workers. The development of well-balanced adult programs on both levels makes learning a continuous process rather than a hit or miss affair.

Training of adults employed in distributive occupations is thus meeting an ever-increasing need in our expanding economy and must be considered a vital part of our total program of education.

WHO TEACHES ADULT CLASSES?

Classes for adults in distributive education may be taught by training specialists employed on either a full- or part-time basis by the State, by local instructors employed on a full-time basis, by high school distributive education coordinators, and by "part-time" instructors employed by the local school system on an hourly or per-session basis to teach an adult class or classes in the community.

WITH WHOM IS THIS MANUAL CONCERNED?

This manual is concerned with the selection and training of *part-time local instructors* of adult classes, only.

The "part-time" instructor is brought in as needed and not employed on an annual basis. Part-time instructors as a group are often referred to as the "call staff."

Training specialists employed by the State, full-time local instructors, and distributive education coordinators teaching adult classes have ample time to receive teacher training and thus present a different selection and training problem than that of part-time instructors.

Part-time local instructors perform a unique service in that, being a part of the community, they can interpret local needs. Their teaching can be fitted into the seasonal pattern of the distributive education program, and they can be called upon when needed.

The fact that the term of employment of part-time instructors is relatively brief makes it all the more important that their selection and training be handled in an efficient manner.

Responsibility for Adult Training

Responsibility for adult training in distributive education in any community requires the cooperative effort of several individuals, namely, the local school superintendent, principal, or vocational director; the local distributive education supervisor, if such a person is designated; the distributive education coordinator; and the instructor.

THE LOCAL SCHOOL ADMINISTRATOR

Since the adult education program is part of the total school education program, the local school administrator should give it full support and see that it meets standards as high as those of other departments in the system.

The local school administrator should fully understand the objectives of the program, be familiar with the curriculum offered, and take an active part in the selection of the instructors.

To understand fully how the program of adult education functions, the local administrator will need to observe classes in operation from time to time. He will also attend meetings of the advisory committees concerned with the development and improvement of adult classes. His attendance at such meetings will lend prestige to the program and identify the training as a vital part of the total educational effort in the community. He will participate in efforts to upgrade instruction and to evaluate the program.

Finally, in his overall planning he will consider the needs of people for training in distribution and will let the public know that the local school system offers a well-rounded program, including the training of adults engaged in distributive occupations.

THE LOCAL SUPERVISOR

Some Communities employ a local supervisor for the development and supervision of the entire distributive education program. Promotion and supervision of adult classes becomes one of his major duties. He is primarily responsible for both the selection and training of instructors of adult classes. The success of adult training is largely a reflection of his ability as a supervisor and teacher-trainer.

THE DISTRIBUTIVE EDUCATION COORDINATOR

In some communities, the high school coordinator functions as the local supervisor of classes for adults. The coordinator is in a strategic position to do this because of his close contacts with the distributive businesses in which his students are placed. He is known and accepted in the community.

When the coordinator teaches adults, as well, he knows at first hand the problems that a teacher of an adult class will face, and is in a position to give valuable assistance to new instructors. He also finds that experience in teaching adults strengthens his high school teaching in that the former requires careful preparation of teaching materials and development of teaching skills.

Coordinators in larger communities help the local supervisor, both in teaching classes and in assisting in supervising and training adult instructors. They are logical persons to call upon in setting up group and individual teacher-training conferences. Coordinators' files also provide leads in locating prospective instructors.

THE INSTRUCTOR

The final responsibility for training rests upon the instructor because it is he who meets the class. Unless he is able to stimulate the class members to think constructively about their problems, all the efforts of the school administrator, the local supervisor, and the coordinator will have come to naught.

The fact that an instructor has been selected on the basis of vocational competency does not guarantee professional skill in teaching. Those who know subject matter cannot always teach. Furthermore, those who have taught high school and college students are sometimes at a loss in handling mature groups of adults.

Since the instructor is the key figure, there is need to think further about the situation in which he finds himself in teaching groups of adults employed in distributive occupations.

Conditions Under Which the Part-Time Instructor Teaches

UNFAMILIARITY WITH TEACHING

Teaching is unfamiliar to many newly appointed instructors. They need to learn good vocational teaching techniques and to feel at ease before a group.

SHORT TERM OF EMPLOYMENT

The fact that instructors are employed on a short-term basis means that time spent on teacher training must be effective and concerned with fundamentals. It is unrealistic to expect an instructor to spend time in training out of proportion to the amount of time he teaches.

ISOLATION

In many instances the instructor has little contact with other adult instructors. Consequently, he must depend upon the supervisor or coordinator for most of his help.

CLASS MEMBERS UNKNOWN

The instructor is seldom acquainted with the class members in advance of meeting them. Since he is usually working, he does not have the opportunity of visiting the places of business in which they are employed. He starts in "cold." It is the supervisor's responsibility to help him overcome this handicap.

LACK OF TEACHING CONTINUITY

The fact that the class rarely meets more than once or twice a week means that interest must be renewed each meeting and the enthusiasm of both instructor and class members maintained between meetings.

Interruptions in scheduled meetings also are to be expected, especially in smaller communities. While much can be done in the original planning to prevent this, there is always the possibility of the unexpected arising, such as a civic event in which the entire community is interested. Such a break in continuity of teaching requires careful handling if attendence is to be maintained. As one means of maintaining interest the instructor can give an assignment to be completed during the interval as a means of maintaining interest.

A "NON-CAPTIVE" AUDIENCE

Finally, the instructor is dealing with a "non-captive" audience. Unless the group members feel that they are getting something of practical value they may drop the course. This is the real challenge for the instructor.

Knowing the conditions under which the instructor works should guide the supervisor in stressing right teaching principles and aid in the selection and training of individual instructors.

Recruitment and Selection of Part-Time Instructors

Where and How To Find Them

WHERE TO FIND THEM

The first problem is to find prospective instructors qualified in the field in which they are to offer instruction; the second is selection. The first is the more difficult.

Local retail, wholesale, and service establishments and sales departments of producers have persons in their employ who are thoroughly familiar with their particular line of work and who are vocationally competent to conduct classes, if only they can be persuaded to teach.

Distributive establishments in neighboring communities can be called upon, when the local supply of potential instructors is low or when individuals feel that they lack the necessary prestige to teach in their own home town.

Trade association executives are another source of information on prospective teachers. They are in a position to judge the vocational competency of their members and in many instances also their ability to present information to a group.

High school and college faculty members are successful in teaching some subjects, provided they avoid the academic approach. The distributive education coordinator will avoid this, but may need some help in working with adult groups the first time he teaches an adult class. It is easy to carry over high school methods into the adult situation. However, this may not produce the desired results.

Former distributive education teachers who have entered other occupations, who have left teaching or have moved into the community and are available for part-time employment are often glad to re-enter the teaching field.

Outstanding members of adult classes may be induced to serve as instructors of such classes. Both their proven interest in training and familiarity with the teaching situation are in their favor.

Outstanding specialists in the field may be called upon to conduct individual meetings. This brings variety into the teaching. Some supervisors run "all star" courses in which each meeting is conducted by a different specialist. This lightens the individual teaching load, but requires skill on the supervisor's part to see that course continuity is maintained and that course content is not duplicated.

Married women with good occupational experience are a good source of instructors since they may have more time to spend on preparation. They may be glad to supplement the family income by teaching.

Women's clubs, such as the American Association of University Women and the National Federation of Business and Professional Women's Clubs, Inc., and alumnae and drama groups can also be drawn on for instructors in specialized fields.

HOW TO FIND THEM

The supervisor must seek out prospective instructors, not depend upon them to come to him. Following are suggested ways of doing this.

Make a survey.—The supervisor or coordinator will automatically include inquiries about available adult instructors when making his survey of training needs in the community. He can profitably visit the various distributive businesses in the community and talk with the owners or managers about likely instructor prospects.

Publicize the need.—A notice may be inserted in the "want ad" column of the local newspaper or a special advertisement may be run calling attention to the need for teachers. Post want notices on school bulletin boards. Ask class members to submit names of individuals they would recommend as instructors.

Call upon the advisory committee.—Since the major function of an advisory committee is to aid in the development and strengthening of the program, the problem of securing well-qualified instructors is one for its consideration.

Full use should be made of the broad experience of this group, representing, as it does, a cross section of distributive businesses, civic organizations, and trade groups in the community.

Offer supervisory courses to uncover talent.—Supervisory courses, such as "How To Train" or "How To Conduct Meetings," may be offered for the express purpose of discovering good instructor material. All will benefit from the training, whether they are selected to teach or not. However, to avoid embarrassment over selection at the end of the course, it is best not to notify the class members of this intention.

Build a reserve staff through group training.—The practice of one State that builds a reserve staff of instructors upon which to draw might be followed. This includes group training on teaching methods for persons who are interested in becoming instructors.

Discuss in conference meetings.—Any time that distributive education personnel are gathered together is a good time to ask about available instructors. The subject should be brought up in group meetings or in individual conversation.

Follow-up leads.—Any casual leads should be promptly followed by a telephone call or a personal visit. Some of the best instructors have been discovered in this way.

Build a directory of potential instructors.—The simple form shown below may be used to keep the problem of finding instructors constantly in mind and, at the same time, build up an excellent reference source.

In the left-hand column are listed the courses to be offered, including the title and a brief description of each. In the right-hand column are listed the names and addresses of potential instructors as these are discovered.

Directory of Instructors

Title and Description of Course	Name and Address of Potential Instructor

Keep an up-to-date personnel file.—A personal data sheet should be made out for each instructor employed. In addition to including in this file the usual facts about personal history and classes the instructor has taught, an evaluation of teaching performance can be recorded.

Qualifications To Be Met

In the supervisor's eagerness to find instructors for the program, he must take care to maintain the standards that have been set for employment. To do otherwise is to invite serious teacher-training problems.

While State Plans for Vocational Education differ as to their specific requirements for part-time extension instructors, the following are recommended for general use.

OCCUPATIONAL EXPERIENCE

The part-time instructor should be required to have at least 5 years of successful experience in the distributive occupation to be taught or its equivalent in technical training and experience. He should be sufficiently familiar with the subject matter he is to teach to discuss it intelligently and to make use of the occupational experience of the group. His own work experience should be recent and, if possible, varied since his class members for the most part will be drawn from different types of establishments.

TECHNICAL TRAINING

Technical training of a part-time instructor is desirable, but may not be required if he has been successful in the special aspect of the occupation which he is teaching.

PROFESSIONAL TRAINING

Teaching experience as a prerequisite for part-time teaching should not be required. Individual in-service training can be supplemented by short intensive courses prior to employment or during the teaching period where feasible. The information provided in this manual and in the "Guide for Part-time Instructors" can be used for this purpose.

SOCIAL ACCEPTABILITY

To be successful in teaching adults, the instructor must be socially acceptable. That means that he must be in good standing in the community. If his ideas are to have weight, he must have the respect of business leaders in his field. He must be emotionally mature, able to give and take on a friendly basis. Finally, he must have the type of outgoing personality that will encourage class members to respond. Such faults as an unpleasant appearance, poor speaking voice, or faulty grammar will lessen his chances for success.

Information on the first two social qualifications can be discovered in talking with people who are personally acquainted with the applicant. The latter two can best be determined in the selection interview.

Pointers on Selection

APPROACH TO THE INSTRUCTOR

It cannot be taken for granted that the individual interviewed will necessarily want to teach. The supervisor should be prepared for probable objections and how to meet them. The following chart will provide a cue.

Main objection	*How to meet*
Fear of the teaching situation.	Assure help will be given. Play up occcupational experience.
Lack of time for teaching and preparation.	Stress short-term arrangement. Adjust teaching schedule to instructor's need.
Amount of work involved.	Cite satisfaction derived. Stress service rendered.
Fear group won't accept him.	Suggest he share teaching with other instructors, rather than teach entire course.

If low rate of pay is mentioned as an objection, explain that this type of teaching is a form of public service the individual renders the community, and the remuneration can help to defray incidental expenses.

A number of appeals can be made in talking with a prospective instructor. Among these are the *prestige* that comes from teaching; *opportunity to meet people* in business and *to gain new ideas;* and the *personal satisfaction* that comes from teaching and rendering a public service. While pay is an additional factor, it is unwise to stress it. Quoting comments that other instructors have made will help to emphasize a point.

It is important to stress the advantages of teaching, but the applicant should not be coerced or drafted into service. Let him sell himself on the idea. Give him time to think it over. Let him make the decision. After all, he is the one who will teach the course and will have to do the work.

THE SELECTION INTERVIEW

The first interview with a prospective teacher sets the tone for future relationships; therefore it should be carefully planned. Sufficient time should be taken to cover adequately all necessary points and to answer the applicant's questions clearly and thoroughly. No matter how informal the interview, the following three objectives should be carried out: (1) get information; (2) give information; and (3) make a friend for distributive education.

Get information.—During the course of the interview, an attempt should be made to discover the individual's attitude toward or previous experience with teaching. His occupational experience should be noted, also facts about his business or personal life that might affect his teaching performance, such as availability, leisure time for adequate preparation, transportation facilities. Personal data required by the local school system should also be recorded.

Give information.—This step provides an opportunity to explain briefly the total distributive education program and the importance of the adult phase of this program. The position of the part-time instructor in the local school system should be made clear. Give sufficient information as to how classes are conducted to enable the applicant to visualize what adult teaching is like, bringing out the difference between the formal academic approach and the informal conference atmosphere characteristic of adult training. The instructor should be made to feel that he will be given every possible help in teaching the course assigned to him. At the same time, need for adequate preparation for teaching should be stressed. The matter of salary should be thoroughly understood to avoid possible unpleasant repercussions later. Forms and the necessity for reports should be explained.

Make a friend for distributive education.—If the individual is interested and acceptable, he should fill out the application for a vocational teaching certificate. This must be approved by the State Department of Education and the local school administrator before he is officially employed. He should be notified of his appointment and a time arranged for a further interview.

Special efforts should be made to see that the interview concludes on a pleasant note when the applicant decides not to accept the position or does not meet qualifications. Reasons for rejection should be handled tactfully and appreciation expressed for the applicant's interest in coming in for the interview. Well-handled personal interviews are excellent goodwill builders for the program. Leave the way open for future use as an instructor in the program.

FINAL APPROVAL

Since the instructor will be employed by the local school system, the school administrator will be the one to give final approval. Several names may be submitted to the school administrator, leaving the final selection in his hands. Of course this is not always possible, particularly in obtaining instructors in a specialized field.

If State or Federal funds are to be used for reimbursement of the instructor's salary, State approval should be granted *before* the instructor starts his class. Otherwise the embarrassing predicament of having no funds out of which to pay for classes already taught may arise. The supervisor should make sure that the course itself is reimbursable, class members for whom the course is intended being engaged in distributive occupations, and course content is related to their jobs.

Training of Part-Time Instructors

The Teacher-Training Problem

THE PROBLEM of teacher training is concerned with helping part-time instructors present subject matter in the most effective way to groups of adults engaged in distributive occupations.

The supervisor need not be a specialist in all subject matter to be taught. He must be thoroughly familiar, however, with up-to-date methods of group instruction and be able to show how the methods can be adapted to particular training situations. He must be convinced of the need for teacher training and recognize ways in which it may be conducted.

NEED FOR TEACHER TRAINING

The need for initial training for those who will teach for the first time is readily admitted. Furthermore, this type of training rightly assumes a major role in the teacher-training program. It covers the must know's of teaching.

Up-grading instruction, for those with some teaching experience, takes two forms. The first is the refresher type or re-training for those who have been away from the teaching situation for some time, or who need to improve on some special phase of their teaching. The second is concerned with presentation of new methods and ideas. This form of training provides the necessary stimulant to improved performance. It aims to make the good better and the better superior. It deals with the "should know's" and "helpful-to-know's," giving teaching the professional touch.

KINDS OF TRAINING TO OFFER

Most of the training of adult instructors will be on an *individual* basis to meet individual need. Some of this training will be given before the instructor starts to teach; the rest will be the on-the-job variety, carried on during the instructors period of employment. Individual training has the great advantage of being given when it is most needed and tends to forestall possible failure.

Group training of instructors has the advantage of permitting pooling experience and this tends to weld members into a professional group. It is less time-consuming than individual training, but harder to organize, since it is difficult to get instructors together in one place at the same time. It supplements, but cannot substitute for, individual training. Both have their place in the adult teacher-training program.

SIX RULES TO FOLLOW IN TRAINING INSTRUCTORS

The following precautions addressed to the supervisor or coordinator should be observed in giving teacher-training on either the individual or group basis.

1. *Avoid too technical terminology.*—Use easy, familiar words. Describe the job of the instructor in terms he can understand.

2. *Adapt training content to time available.*—There is so much to be said on the subject of methods of teaching that you may be tempted to try to cover more than the instructor can assimilate in the time allotted for training. This only results in confusion. Be selective in what you take up and have it organized in an orderly fashion.

3. *Make training specific.*—Bring out the why, what, how, when, and where in teaching. Use specific examples. Follow discussion of principles by "SO WHAT?" in order that the instructor will see the application of these principles to his own teaching problems.

4. *Encourage learner participation.*—In individual training encourage the instructor to ask questions and to solve his own problems. If he is using a prepared course outline, help him to make it his own, not use it as a "canned" course—adapt rather than adopt.

In group training utilize various forms of class participation, such as role playing, buzz sessions, and panel discussions.

5. *Use visual aids.*—Use the blackboard, flip charts, posters, and hand-out materials to shorten training time and strengthen retention through eye appeal.

6. *Provide for further study.*—While your primary aim is to prepare the instructor for the immediate teaching job, you are in an excellent position to stimulate his interest in further study. Give interested individuals a selected bibliography containing references on both distributive education and more specifically on adult teaching. Advise members as to courses of study available in the community or elsewhere and invite them to future training conferences. Some of the members may become full-time instructors as the result of their interest. All will probably have greater appreciation of the teaching profession and a fuller comprehension of the distributive education program.

USE OF THE "GUIDE FOR PART-TIME INSTRUCTORS"

The "Guide" has been prepared as an aid in, not as a substitute for either individual or group teacher training. It cannot do the job alone. The following suggestions will help you to use it effectively.

Become thoroughly familiar with the Guide so that you can tie it in with your teacher training and answer any questions that may be raised about it.

Decide whether to hand it out on a permanent or a loan basis.—If the guide is to be returned for the use of others, it obviously should not be marked up and some arrangement should be made for having it turned in at the termination of the teaching period.

State the purpose of the Guide.—Explain that the purpose is to present the highlights on adult teaching as a handy reference for new instructors and as a refresher for the experienced ones.

Describe the four sections.—Give an overall picture first, pointing out the four sections, indicating their purpose:

I. You Learn About Teaching	Background for Teaching.
II. You Plan for Teaching	Preparation for Teaching.
III. You Teach	Teaching Itself.
IV. You Check and Evaluate	Conclusion and Evaluation.

Refer to specific points as you discuss them in training. In individual training point out special information in the Guide as you go along. In group training, have the members read over the Guide in class, or assign each section of the manual to a buzz session for discussion. If time allows, assign a separate meeting on each section of the Guide.

Suggest as a reference.—Suggest that members keep the Guide on hand as a ready reference and reminder. Ask members to bring in questions about it. Check back on the use of the Guide from time to time.

Individual Teacher Training

Recognition of the importance of individual training is the first essential for successful teacher training. Acceptance of the responsibility for this task by the supervisor or coordinator is the next. Appreciation of what individual training entails is the third, for without it a superficial job is likely to be done.

WHAT IT TAKES

First of all, individual training takes planning if it is to be effective. It means sitting down and figuring out just what help this individual instructor needs. It involves arranging for the best time for such training to be given and carrying out the training in an orderly fashion.

Individual training takes time—time for preparation and time for the training itself. A rushed period of training may be more confusing than helpful to a new instructor. One must gauge the amount of time necessary for training in terms of the individual's needs. Some potential instructors think they know, but actually they do not. Others will have picked up techniques that do not fit in the adult teaching situation. It takes time to learn and to re-learn.

Individual training requires the ability to help the learner solve his own problems, not to do his thinking for him. Information and ideas need to be drawn out rather than to be poured in. This requires a critical yet open mind.

Individual training takes patience and tact. The latter trait is particularly necessary in discussing weak points discovered through observation of teaching. The errors must be corrected without tearing down the instructor's confidence or enthusiasm for teaching.

Use this constructive approach as the keynote of all individual training conferences, from the first period of induction to the concluding terminal interview. Emphasize what to do, not what not to do.

HANDLING INDUCTION TRAINING

Induction training starts when the applicant says "yes" and has been approved unofficially. How many induction meetings will be held before the instructor meets his first class depends on the need of the instructor. There should be at least two; one, an introductory meeting; the second, a conference on preparation for the first class. The outcome of this second meeting will determine whether or not more will be necessary. The following suggestions for handling induction training are offered to the supervisor or coordinator.

The introductory meeting.—This meeting deals with the points covered in Part I—YOU LEARN ABOUT TEACHING! of the "Guide." You should do all you can in this meeting to build up the instructor's self-confidence. Emphasize the value of his practical experience, if he has never taught before.

Refer to the Guide in explaining the place of the instructor in vocational education and in the local school system. If you are meeting in the school building, introduce the instructor to the school superintendent or principal to make him feel a part of the local school system. Spell out his responsibilities in specific terms. Show and explain forms, such as registration and enrollment records and certificates awarded on completion of a course.

In discussing the makeup of the group, go over the list of the members and where they work, if such is available, and suggest that the instructor learn the names before his first meeting. If such a list is not available, give him some idea of who will likely attend and where they work. Refer to the section, "You Learn About Your Class Members" in the Guide in discussing what adults want. Mention the fact that adult groups are usually well behaved, since members attend voluntarily and with a purpose. Emphasize the point that a wholesome attitude on the instructor's part is likely to bring out a similar response from the group.

Go over the "Three B's of Vocational Teaching" thoroughly, giving illustrations to make points clear. State that these principles should be applied in every meeting and should be considered in every step of preparation. Let the instructor bring out the close relationship between teaching and selling so that he may feel at home in the teaching situation. Make sure the four basic steps are understood.

This meeting paves the way to PART II—YOU PLAN FOR TEACHING! of the "Instructor's Guide." If a course outline has already been developed, explain that it is to be adapted as a guide, not taught word by word. If the course of being developed from the beginning, discuss the objectives and

and major topics briefly and ask the instructor to bring in further ideas to the next conference. Give the instructor sufficient reference material on his subject to get him started but not enough to confuse him. Conclude with a definite assignment on preparation for teaching and set a date for the next training conference. The "Guide" should be mentioned as a helpful reference, with PART II—YOU PLAN FOR TEACHING! marked for study.

Preparation for the first meeting.—This conference covers the four major points in PART II—YOU PLAN FOR TEACHING! of the "Instructor's Guide" and the first point in PART III—YOU TEACH! To make sure that the instructor will have his material well in hand, spend the major time on "what to teach" and "preparation for each meeting," with just enough emphasis on the "how to teach" at this point to bring about a successful first performance. Since you will probably want to be on hand the first meeting to assist in "setting the stage," these points can be touched on briefly.

Keep your instruction on the course outline simple, drawing out from the instructor the objectives of the course and the topics to be included. You may find it a good plan to do the writing yourself while the instructor does the talking, since it is difficult for some people to get information down on paper in an orderly way.

Start off with the three B's of vocational teaching in discussing "how to teach." Let the instructor suggest ways in which the different topics may be developed, particularly stressing participation of the group. Show how the instructor can use the list of members of the group in relating instruction to job placement. Check on how he plans to use visual aids, such as merchandise, charts, posters, or hand-out materials.

Explain the chart for making a teaching plan in the section on "You Prepare for Each Meeting" of the "Guide." Then work with the instructor in planning for the first meeting. See that the basic subject matter is reduced to four or five main points that can be grasped by members of the group in the time allotted. Have the instructor apply the four basic steps to the instructional plan for the first meeting by explaining to you just what he will do to prepare the learners; what special methods he will use to present information effectively; how he plans to get participation; and how he will close the meeting. Caution the instructor to allow time in planning for this last step. Decide between you the best type of teaching notes to use, but warn against leaning on them too heavily or attempting to memorize them.

Refer to the steps in "setting the stage" briefly, stating that you will be on hand to help. Explain to the instructor how he will be introduced. Be sure requirements for registering and keeping attendance records are clearly understood.

Briefly go over the points on "You Hold Your First Meeting" of PART III—YOU TEACH! of the "Guide." End the conference by introducing the "Profile of Training Performance" at the back of the guide. Explain that the purpose of this device is to help an instructor discover his strong and weak points in teaching so that he can improve as he goes along. Go over the points on the sheet with the instructor and make sure that he understands how to make the profile. Suggest that the instructor rate himself after the first meeting. If you plan to rate the instructor, let him know this, too. Have him keep a record of both ratings for future use.

If the instructor feels that he is sufficiently prepared to handle the first meeting, end on a note of encouragement, making sure that he knows when and where to meet. If he requests another conference before teaching, arrange for further training.

HANDLING ON-THE-JOB TRAINING

Training takes on real meaning for your instructor when he teaches the first class. That is where the results of your preparatory teacher-training show and the on-the-job training begins. This involves observation of teaching, preparation for the post-teaching conference, and the training interview itself. How well these three steps are carried out may make or break your instructor.

Observation of teaching.—You cannot tell how well the instructor is doing unless you observe him in action, and you cannot observe intelligently without planning what to note about the members of the group and their reactions, the instructor's performance, and physical classroom details.

To judge teaching performance fairly, you must observe the following points about the GROUP MEMBERS: characteristics of the group, such as sex, age, education, occupational experience; group participation, including extent—did everyone take part? amount—little or much? quality—were contributions to the point? interest in the subject—how shown? group relationships—was the meeting stiff or informal? How did members react to one another?—to the instructor? individual members—were there any trouble makers?—any who needed encouragement?—any leaders in the group?

In observing your INSTRUCTOR'S PERFORMANCE you should keep in mind the three B's of adult teaching:

Is he keeping on the learner's level?
Is he relating instruction to job experience?
Is the teaching stimulating?

You should notice to what extent the instructor demonstrates the four basic qualifications for a good teaching job:

In which phase is he most proficient?	Desirable personal traits.	Knowledge of subject matter.
In which is he weakest? In what specific ways is this shown?	Understanding of individual differences.	Teaching skills.

Finally, make a breakdown of the teaching performance after observing the instructor in action for discussion later. Use a rating device such as the "Profile of Training Performance" in the "Guide for Part-Time Instructors", to simplify your observation problem. Note specific examples of good practices as well as those needing correction to substantiate your rating.

The main points to observe about PHYSICAL CLASSROOM DETAILS are indicated on the "Profile of Training Performance." While it is not always possible for an instructor to control these factors, it may give you a clue as to ways in which you can improve the teaching situation for him.

Note particularly the items under PERSONAL QUALITIES. This is the most difficult but sometimes the most important area to discuss with an instructor. To keep your rating impersonal, be sure to jot down specific examples to substantiate your evaluation. Notice the *good* as well as the *weak* points and remember to comment on them later, starting with the good points.

Under appearance—evaluate grooming and appropriateness of dress. Rate volume as well as modulation in voice. Observe the use of grammar and any idiosyncrasies in speech, as well as rate of speaking. Be on the alert for distracting mannerisms of which the instructor may not be aware. Tie in your rating on group management and control with your observation of the reactions of class members. And, above all, recognize the extenuating circumstances that may be causing a poor rating.

Be considerate in your observation. Don't let your presence in the classroom complicate the instructor's teaching situation. Put him at ease by taking the following precautions:

1. Arrive on time, and if possible, remain through the entire meeting.
2. Sit in back of classroom where you can see, but not be noticed by the instructor and class members.
3. Take notes during the meeting unobtrusively.
4. Lend a hand with props, visual aids, and room adjustment, as needed.
5. Avoid taking over the meeting, except in a case of emergency.

Preparation for the post-teaching conference.—Be sure to say a few words of commendation to the instructor at the end of the meeting. If he indicates a desire to discuss his experience with you, or if you feel that he needs guidance before the next meeting, set a date for a future conference then and there. Allow sufficient time to elapse for both of you to get a perspective on the meeting, but not so long a period that the details are forgotten.

Before the conference, go over your teaching observations and *plan what you are going to say and do.* Never rush into a training conference without thinking it through.

Arrange for a suitable meeting place, which will be relatively free of distractions, and have all necessary materials on hand.

The training interview.—The purpose of a training interview is to encourage and strengthen your instructor. Make the interview a give-and-take affair, with the supervisor helping the instructor to solve his own problems. The following suggestions on interviewing will help to make the conference go smoothly.

1. Allow the instructor to comment on his performance first. He will probably bring out the main weaknesses himself.
2. Ease into the situation by discussing the general impression of the meeting, first.
3. Discuss the *main* strong points first and then the weak points—don't get bogged down with petty details. If a rating sheet is used, go over it with the instructor.
4. Keep discussion constructive, stressing how to improve, not what was wrong.
5. End on a note of encouragement.

The number of training interviews to be held with an instructor will depend upon individual needs. However, you cannot take it for granted that because the first meeting is a success, no further training will be necessary. Sometimes an instructor will get careless in the middle of a course and needs to be encouraged and given help in making thorough preparation for each class session. Some topics are easier to teach than others. Introducing a new teaching technique that may cause difficulty or a dwindling attendance record may provide a reason for a training conference. Comments by employers and class members may also indicate whether or not further observation is needed.

The Guide can be used in all training interviews, by referring to the points under discussion. If there is a weakness in lesson preparation, for example, the section, 'You Prepare for Each Meeting," PART II, can be reviewed. If a greater variety of teaching methods is needed or the instructor is having trouble with some difficult class members, the section, "You Try, Try Again," PART III, can be discussed in the light of the particular problem.

Preparation for the last meeting.—Go over the points in "You Hold Your Last Meeting," PART III of the Guide, with your instructor before the last meeting so that he will be properly prepared to leave a good final impression. If certificates are to be awarded, make sure that they are properly made out and signed. If a guest speaker, such as a school superintendent, State supervisor, or representative of business, is to present the awards, notify him in advance and brief him on the procedure to follow. Be sure he knows how to pronounce the names appearing on the awards. Do all you can to make the meeting a success.

THE TERMINAL OR EXIT INTERVIEW

The purpose of this interview is to tie up the loose ends, to evaluate the teaching experience, and to pave the way for possible further teaching.

PART IV—YOU CHECK AND EVALUATE! of the Guide presents the points to be considered from the instructor's angle. You, as a supervisor, will cover these same points in carrying out the three familiar steps in interviewing: (1) get information; (2) give information; (3) make a friend for distributive education.

Get information.—In this interview be sure to see that the instructor turns in all necessary records. Check to make sure that they are complete and accurate, because it may be difficult to locate the instructor later to get them corrected.

Much valuable training material is lost because supervisors fail to call in reference material that has been loaned. A check sheet will facilitate matters. If a teaching outline has been developed, make sure you have a copy for your files.

Take this opportunity to get the instructor's evaluation of his teaching experience. Ask for his frank suggestions as to how the situation might have been improved. Include such points as selection of group members, registration, time and place of meeting, course content, training facilities, and aids in teaching. Ask how he profited from the experience.

Give information.—If group members have turned in an evaluation or you have obtained a report by other means, go over the results with the instructor. Refer to the Profile of Training Performance in the Guide. Explain future plans for training, if you expect to call upon the instructor for further teaching. Make sure his personal data sheet is complete. Encourage further study by referring to the bibliography for instructors.

Make a friend for distributive education.—If an instructor proves to be definitely unsuitable it may be necessary to terminate his employment before completion of the course. It is usually better to allow a mediocre instructor to save face by completing the course, but not employ him again.

Be sure that all arrangements concerning pay have been satisfactorily settled. A slip-up at this point may destroy all the goodwill developed during the employment period.

End each interview with a genuine expression of thanks and appreciation for the service which the instructor has rendered. Let him go away feeling proud of his association with teaching and the distributive education program.

At the conclusion of the interview, jot down on the instructor's personal data sheet any pertinent facts arising out of the interview before the information loses its significance.

SUGGESTED SCHEDULE OF CONFERENCES WITH INSTRUCTOR

Use the suggested schedule below as a guide and check sheet in handling individual conferences with instructors.

Conference	*What to do*
1. Selection interview.	Sell instructor on teaching. Give some orientation.
2. Introductory meeting.	Continue orientation. Start thinking on course outline.

3. Prior to first class.	Review course outline and methods to be used in teaching. Work out teaching plan for first meeting.
4. Follow-up of first class meeting, and every meeting, if possible.	Discuss Profile of Training Performance. Review plan for next meeting.
5. Prior to last meeting.	Go over points on holding last meeting.
6. Follow completion of course.	Complete records. Evaluate entire course.

Group Teacher Training

Group teacher training adds strength to your individual training, reinforcing the principles discussed and elaborating on their application. It is most effective when combined with on-the-job training.

Making attendance at training conferences an invitation affair tends to enhance their prestige and arouse interest. An informal approach also has greater appeal. If attendance is a requirement for teaching, this fact must be explained to the instructor, pointing out the value of such meetings to him.

VALUE OF GROUP TRAINING

Group training is usually looked upon as a *timesaver,* since a number of people can be reached at one time in a group.

Uniformity is another advantage of group training. When instructors meet together, all are getting the information in the same way.

Opportunity for *exchange of ideas* is provided which results in a pooling of experience valuable to all concerned.

Group leadership techniques can be tried out in group training, and these can be used by the instructor in teaching adult distributive education classes.

Group training is also a *morale builder.*—Meeting together with other instructors makes each instructor feel an important member of the teaching profession. Recognition of the fact that others have problems, together with the new ideas gained from the group, builds self-confidence and self-esteem.

ORGANIZATION PATTERNS

Group training conferences may be organized on a State, area, or local basis.

State organization.—If your State is geographically small, conferences may be held in one central location. Training may be conducted as a series of four 3-hour meetings on completion of which the members receive a teaching certificate. By running the series continuously throughout the year, a large call staff of instructors can be built up.

Area organization.—If your State is in the medium or large geographical classification, the area plan may provide a more flexible arrangement. Conferences can be conducted for certain areas by the State Supervisor or Teacher-Trainer of Distributive Education. Both high school and adult instructors or a combination of instructors from the different vocational services can be invited to such conferences. Time for such conferences usually runs from 2 to 5 hours, given in a 2-day program or a 1-day program given in the afternoon and evening.

Local organization.—Group training can also be offered on a local basis by the local supervisor or coordinator in charge of the distributive education adult program. Training can be conducted on a series basis or follow the short-term area plan. Local training conferences can also be used in combination with State and area meetings. They can serve as the nucleus for area or even State meetings.

INITIAL TRAINING

Group meetings provide a good orientation for the new instructor. He feels at once a part of a group and of the distributive education program and responds to the stimulus of numbers. The nearer he is to the teaching situation, the greater will be the value of such meetings to him. With time, both the emotional stimulus and details fade; consequently, when a period elapses before the instructor starts to teach, it will be particularly important to follow up group training with individual conferences.

The *content of training* for beginning instructors, whether given in a series of meetings or on a short period basis, will cover the basic areas presented in the "Guide for Part-Time Instructors" with the greater emphasis on Parts II and III.

Methods of handling meetings.—Demonstrate in teacher-training conferences the principles advocated for handling adult groups by carrying out the following steps:

1. Keep the atmosphere informal. Arrange the classroom in conference meeting style.
2. Discuss rather than lecture, making full use of visual aids.
3. Provide for practice and demonstration whenever possible.
4. Summarize each meeting.
5. Have members evaluate the meetings.

Use of visual aids.—Visual aids for instructor training should deal with two kinds of information: *information concerning State or local school practices* and *information on training methods and materials.* The types you will use and the number will depend upon how your conferences are conducted.

In presenting State and local information, use such aids as charts showing the organization of the vocational services; brochures describing the adult distributive education program; forms to be filled out, such as registration and attendance records, certificates, rating and evaluation sheets; and teacher-training films.

A wide variety of aids may be used in presenting information on teaching. The blackboard is the simplest teaching aid to use from the preparation standpoint. Some of the material in the "Guide" can be reproduced on the board or in poster or in chart form, such as the three B's of vocational teaching, the teaching plan, and the four basic steps in training. More detailed information such as the teaching procedure outlined in Part II—YOU PLAN FOR TEACHING! or the art of questioning can be presented in mimeographed form for discussion. The Guide itself can be used in the training meetings, as a summary, and as reference material at the end of the training period.

TRAINING FOR EXPERIENCED INSTRUCTORS

Group training is particularly adapted to training experienced instructors since they have sufficient knowledge of the teaching situation to participate actively in the meetings. Furthermore, experienced instructors are usually eager to share their experiences with others.

Content.—Training for experienced instructors is usually centered around three main themes: (1) problems, (2) new technical developments, and (3) improved methods. The most successful conferences combine some of each.

Problems may be drawn from the group, or a special problem may be singled out for study, such as how to get group participation. New technical developments may cover such areas as processing, design, and new materials. Improved methods may cover such areas as training techniques, visual aids, specific subject matter, and reference material.

Methods of handling meetings.—Group teacher-training meetings provide an opportunity for members to practice various leadership techniques in addition to those mentioned in the "Guide" which they can later use with adult classes.

A study of problems lends itself to the use of conference, role playing, critical incident, and case method techniques. Panel discussions, buzz sessions, and demonstrations can be brought into play in taking up new developments. If the "Guide" is being introduced for the first time, members can be assigned sections for study to be presented later to the group for discussion. Practice in evaluating training conferences can also be provided. Mimeographed copies of the bibliography below would make excellent pass-out material. Reports might be made on the references suggested.

Bibliography for Instructors

REFERENCES ON TEACHING

Conference Leadership. Elizabeth, N. J., Esso Standard Oil Co., 1952.

Group Processes for Adult Education. Greenwich, Conn., Seabury Press, 1954.

Group Thinking and Conference Leadership. William Emil Utterback. New York, Rinehart Co., Inc., 1950.

How To Run A Meeting. Edward J. Hegarty. New York, McGraw-Hill Book Co., 1947.

Improve Your Training Technique. Aiken. New York, Prentice-Hall, Inc.

Informal Adult Education. Harry A. Overstreet. New York, Association Press, 1951.

A Manual for Discussion Leaders and Participants. Greenwich, Conn., 1954.

Portfolio of Teaching Techniques. New London, Conn., Educator's Washington Dispatch, 1952.

Preparation and Use of Audio-Visual Aids. Kenneth B. Haas *and* Harry Q. Packer. New York, Prentice-Hall, Inc., 1950.

Principles and Methods in Adult Education. A. D. Mueller. New York, Prentice-Hall, Inc., 1937.

Public Vocational Education Programs (reprint). U. S. Office of Education, Division of Vocational Education, Washington, D. C.

Retailing Has A Career for You. New York, Personnel Division, National Retail Dry Goods Association, 1951.

T. N. T. Techniques, Notes, Tips for Teachers. James O. Proctor *and* Grieszer. Albany 1, N. Y., Delmar Publishers, Inc., 1949.

Teaching for Better Schools. Kimball Wiles. New York, Prentice-Hall, Inc., 1953.

Tested Training Techniques. Kenneth B. Haas *and* Claude H. Ewing. New York, Prentice-Hall, Inc., 1950.

Vocational Education, America's Greatest Resource. John A. McCarthy. Chicago, American Technical Society, 1951.

Vocational Education in a Changing World. F. Theodore Struck. New York, John Wiley & Sons, 1945.

Vocational Education in Distributive Occupations. Washington, U. S. Government Printing Office, 1954. (U. S. Office of Education, Vocational Division Bulletin No. 255, Distributive Education Series No. 19.)

The Workshop Way of Learning. References on Vocational Education. Earl C. Kelley. New York, Harper and Bros., 1951.

Your Opportunities in Distribution. New York, National Association of Manufacturers, 1954.

Your Public Relations. Washington, D. C., American Vocational Association, 1954.

Evaluation of Selection and Training

Points To Be Considered by the Supervisor or Coordinator

YOU WILL NEED to consider three points in evaluating the selection and training of adult instructors.

PURPOSE OF EVALUATION

First, decide upon the purpose of your evaluation and what use you will make of the results. Presumably, you evaluate in order to determine the strengths and weaknesses of the factors under consideration with the intention of improving your performance. To stop at the evaluation itself is to miss the mark.

TIME FOR EVALUATION

Continuous evaluation.—If you are alert, you will evaluate continually, modifying your plans and procedures in selecting and training your instructors to meet changing conditions.

Periodic evaluation.—Take a semi-annual inventory or evaluation. Such an evaluation helps to bring all factors into focus and gives a sound basis for the next half year's work.

FACTORS TO BE EVALUATED

Determine clearly and specifically what factors you want to evaluate under selection and training. Consider both the quantitative and qualitative aspects in each case.

Evaluating Recruitment and Selection

Start your evaluation by asking yourself questions about the following three factors:

QUANTITY AND QUALITY OF INSTRUCTORS EMPLOYED

Does the number of instructors employed meet your need? Has there been an increase over the past year? To what extent do your instructors meet your teacher qualifications?

SOURCES INVESTIGATED

From how many different sources are you obtaining instructors? Are there others that you might investigate? Are any proving unsatisfactory?

METHODS OF RECRUITMENT USED

Are you using all possible methods of obtaining instructors? Which are proving most satisfactory? Which the least?

Evaluating Teacher Training

Consider the following two factors in evaluating teacher training: (1) kinds and amount of training offered, (2) results of teacher training.

KINDS AND AMOUNT OF TRAINING OFFERED

Individual training.—To what degree is individual training being carried on? Have enough individual conferences been held to date? Are training conferences being conducted in an effective way? Is use being made of the suggested schedule for conferences? Which type of conference is proving most successful? Which least? Are any being overlooked? What percent of the classes have been observed? Are any classes being overlooked?

Group training.—What group training is being carried on or planned? Have a sufficient number of meetings been held to date? Are group training meetings being organized on the most effective basis? Are any opportunities for group training being overlooked? Are the training meetings being well attended? Are they worth the effort involved, in terms of benefit received?

RESULTS OF TEACHER TRAINING

As measured by attendance and enrollment.—Whether or not your instructor has profited from training should be reflected in the interest of members of the group as measured by attendance and, in part, by enrollment. However, the length and type of course as well as time of year in which training is given will affect attendance. It must also be recognized that size of enrollment may be due to good promotion rather than exceptional teaching. Also, large classes are not desirable in most instances. However, if an instructor consistently builds up good enrollment in whatever class he teaches from year to year, the chances are he is a good teacher. With these reservations in mind you can ask yourself the following questions as one way of measuring the results of your training.

How well is attendance holding up? Are there any classes that are falling down in this respect? Are enrollment figures holding up or on the increase? Are any classes being discontinued because of low enrollment? Is poor teaching or poor promotion the cause of decreasing enrollment?

As evaluated through observation.—What general conclusions can you draw about the effectiveness of teaching as judged through observation? What strong points stand out? What indications are there of need for further training?

Are the physical conditions for training generally satisfactory? What can be done to improve them?

As evaluated by class reaction.—It is most helpful to have the members of adult classes turn in written evaluations of the classes they attend. Some instructors call for a short comment at the end of each meeting. The most common practice is to ask for an unsigned statement at the conclusion of the course. See suggested form included in Part IV—YOU CHECK AND EVALUATE! in the "Guide."

You can also obtain reactions by talking with class members themselves or by discussing the course with employers. You are then in a position to ask yourself these questions:

Are group members satisfied with courses offered? What courses are being well received? poorly received? Are there any requests for further courses? In what way can courses be strengthened?

As evaluated by instructor's reaction.—The most direct way to evaluate teacher training is in terms of the individual instructor's reaction. How does he respond to training? Does he welcome and act upon suggestions? Does his performance show improvement with practice? Is he interested in further teaching?

Does the instructor understand the philosophy underlying vocational education? What does he know about distributive education as a whole? How does he feel about the program? Will he be a good spokesman for distributive education whether he continues to teach for you or not? In short, are you doing a good job of convincing the instructor of the importance and value of distributive education and the adult program?

Finally, is the instructor's teaching experience developing further understanding of individuals and his ability to work with others? Is it lifting his sights beyond the immediate teaching job? Is it proving to be merely a chore or a rich and rewarding experience?

Answers to the above questions can be found in working with the instructor during his period of employment and in talking with him frankly in the exit interview.

Check on Selection and Training

To obtain a composite picture of your selection and training you can use the "Rating Profile" form on page 28 in two ways.

USE OF FORM

In present profile form.—The profile form gives a graphic picture of the strong and weak points at a glance. It allows flexibility in judgment, getting away from the stereotyped alphabetical or "yes"/"no" response. Since the items included cover the main points discussed in this handbook, the rating sheet serves as both an evaluation sheet and a summary.

In deciding where to put your point on the line think in concrete terms as far as possible. For example, under RECRUITMENT AND SELECTION, figure up how many of your instructors actually meet your teacher requirements before you place your point on line 2; refer to sources suggested before rating 3. Under TRAINING, if no group training is given at all, put the point at the extreme left on lines 8 and 9. This may mean that either it has proved impractical or that you are missing an opportunity. The jog in the profile will have at least jogged your attention on this point. Avoid a superficially high rating in assigning a value to the items under EXPLANATION OF BACKGROUND INFORMATION by reviewing the information you gave in each case. Be honest with yourself in rating the items under STIMULATING INTEREST. What efforts did you actually make to develop interest in teaching, in further study, and in the distributive education program?

Let your OVERALL ESTIMATE take into consideration your weighing of the individual items. Some may appear more important to you than others and hence either raise or lower your final estimate. Be judicial—fair, yet firm with yourself.

As a suggestion sheet.—The profile can be transformed into a suggestion sheet by simply omitting the rating and writing what is to be done, on the line to the right, after each of the points listed.

USE OF RESULTS

Such a form fits into continuous evaluation nicely. Check the items which call for improvement and work on them. Then re-evaluate at a later date and note improvement.

Use the form in conjunction with your semi-annual or annual evaluation as well. Review your series of ratings or suggestions before making this final evaluation. Then plan what points you will emphasize for the coming period.

In short, make the form work for you in improving the selection and training of your adult instructors. Use the Profile of Training Performance in the "Guide" to assist in counseling with your instructors concerning their improvement.

Rating Profile On Selection And Training Of Adult DE Instructors

Name of Supervisor ______________________ Date ______________

Directions: Place a dot on each line at a place which will indicate your rating on this point. At the conclusion of the rating make a profile by drawing a line connecting the dots.

RECRUITMENT AND SELECTION Low High

1. Number of instructors employed.. ______________________
2. Quality of instructors............ ______________________
3. Use of sources.................. ______________________
4. Recruiting methods.............. ______________________
5. Forms used..................... ______________________

TRAINING

6. Amount of individual training.... ______________________
7. Quality of individual training..... ______________________
8. Amount of group training........ ______________________
9. Quality of group training........ ______________________

EXPLANATION OF BACKGROUND INFORMATION FOR TRAINING

10. Vocational education............. ______________________
11. Distributive education program.... ______________________
12. Adult program.................. ______________________
13. Three Be's of adult teaching...... ______________________

STIMULATING INTEREST

14. In further teaching.............. ______________________
15. In further study................. ______________________
16. In distributive education......... ______________________

OVERALL ESTIMATE ______________________

U. S. GOVERNMENT PRINTING OFFICE : 1960 O - 554489

VT 002 250

The Use of the Differential Aptitude Tests in Predicting Achievement in High School and College, A Study Covering the Graduates of Twin Valley High School from 1957 to 1966.

Gibson, Francis R.
Pub Date - Dec66
MF AVAILABLE IN VT-ERIC SET. 39p.

*APTITUDE TESTS, *PREDICTIVE ABILITY (TESTING), *ACADEMIC ACHIEVEMENT, *HIGH SCHOOL STUDENTS, COLLEGE STUDENTS, HIGH SCHOOL GRADUATES, DROPOUTS, GRADES (SCHOLASTIC), POST SECONDARY EDUCATION, OCCUPATIONS, TEST RESULTS,
Differential Aptitude Test, Twin Valley, Minnesota,

The purpose of the study was to determine the reliability of high school freshman scores on the Differential Aptitude Test (DAT) to predict high school achievement level, performance level on subsequent aptitude tests such as the Minnesota Scholastic Aptitude Test (MSAT) administered to all juniors, achievement level in post-high school education, vocations of graduates, and achievement level of dropouts in relation to graduates. Results of the MSAT and junior and senior high school rank were used to judge the effectiveness of the DAT Verbal Reasoning and Numerical Ability Total as the predictive criterion on 280 of 304 Twin Valley graduates from 1959 through 1966. In the performance on subsequent tests and grades-earned criteria, the DAT predictor seemed to function as a reliable index of future achievement. It was statistically significant also when compared to college achievement as shown by grade point average. Those in the highest achievement level on the DAT secured more education beyond high school, and their occupations tended to be more on the professional level than those of lower achievement groups. From 64 to 70 percent of the dropouts scored in the low achievement group of the DAT predictor. The DAT predictor seemed to function as a reliable index of future achievement. Grade performance data are included for bookkeeping and stenographic students. Other data and results are presented. (PS)

VT 002 250

ED022065

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

THE USE OF THE DIFFERENTIAL APTITUDE TESTS IN PREDICTING ACHIEVEMENT IN HIGH SCHOOL AND COLLEGE

A Study
COVERING THE GRADUATES
of
TWIN VALLEY HIGH SCHOOL
from
1957 to 1966

by

Francis R. Gibson
Counselor

Twin Valley, Minnesota December, 1966

VT 02250

TABLE OF CONTENTS

PAGE TITLE

1 Introduction

4 Review of Related Literature

5 Review of Related Studies

10 Analysis of Grades in the Twin Valley Study

11 Subsequent Tests (MSAT) and Grades Earned (HSR) in the Twin Valley Study

13 Analysis of College Performance

14 Analysis of Business College and Trade-Technical School Performance

15 Summary of Post-High School Education

16 Analysis of Twin Valley Dropouts

17 Analysis of Occupations

18 Tables

LIST OF TABLES

TABLE TITLE

1 Student Grouping According to DAT Scores

2 Correlation Coefficients of DAT with HSR

3 DAT Scores Related to College Achievement

4 Summary of Grades Earned in All Course Categories

5 Summary of Test Performance and Grades Earned--Group 1 Women

6 Summary of Test Performance and Grades Earned--Group 2 Women

7 Summary of Test Performance and Grades Earned--Group 3 Women

8 Summary of Test Performance and Grades Earned--Group 1 Men

9 Summary of Test Performance and Grades Earned--Group 2 Men

10 Summary of Test Performance and Grades Earned--Group 3 Men

11 Summary of Test Performance and Grades Earned--Group 1 Men and Women

12 Summary of Test Performance and Grades Earned--Group 2 Men and Women

13 Summary of Test Performance and Grades Earned--Group 3 Men and Women

14 Moorhead State College Expectancy Table

15 Concordia College and Other Private Colleges Expectancy Table

16 North Dakota State University and Other Universities Expectancy Table

17 All Junior and Four-Year Colleges Expectancy Table

18 Business Colleges Expectancy Table

19 Trade and Technical School Expectancy Table

20 Summary of MSAT Test Performance

21 Summary of HSR Performance Expectancy Table for Women

22 Summary of HSR Performance Expectancy Table for Men

23 Summary of Post-High School Training

24 Summary of Twin Valley High School Dropouts

25 Analysis of Occupations

THE USE OF THE DIFFERENTIAL APTITUDE TESTS
IN
PREDICTING ACHIEVEMENT IN HIGH SCHOOL AND COLLEGE.

By High School Counselor, Twin Valley, Minnesota

INTRODUCTION

The interpretive use of the DAT down through the years has posed a number of the following problems and questions:

What level of achievement in high school courses and in the resulting HSR and GPA may reasonably be expected of students at Twin Valley who, as freshmen, earned certain scores on the Differential Aptitude Test Battery?

What level of performance may be expected on subsequent aptitude tests such as the Minnesota Scholastic Aptitude Test, MSAT, administered to all graduates as juniors?

What level of achievement in post-high-school education may reasonably be expected of graduates as shown by the GPA at the end of the first marking period and the end of the freshmen year?

What vocations do graduates enter according to their DAT group classification?

What drop out factor is involved in the small size of the graduates in group three when compared to groups one and two?

THE NEED FOR THE STUDY AND THE PROCEDURE

In order that local statistics be made available for use in test interpretation during the counseling process at Twin Valley, data was gathered using the DAT VR+NA Total as the predictive criteria on 280 of 304 Twin Valley graduates of 1957 through 1966.

The DAT was first administered through the State Wide Testing Program to the class of 1957 as freshmen in 1953. To facilitate grouping the revised 1961 norms for Minnesota freshmen were used. The 147 women and

133 men were grouped separately as different norm tables apply to each group. Each of these graduates, as freshmen, had taken the DAT Battery, enrolled in certain required and elective courses, and subsequently graduated from Twin Valley High School. Each of the graduates of 1959 through 1966 had also taken the Minnesota Scholastic Aptitude Test (MSAT) as juniors.

The Verbal Reasoning (VR) and Numerical Ability (NA) Total, commonly referred to as General Scholastic Ability, was selected as the predictive criteria. This selection was based on recommendations found in _A Manual for the DAT_(1), _Supplement to the DAT Manual_(2), the _Counseling and the Use of Tests_(3), and an article by Layton and Swanson(4). Graduates were grouped to represent high, average or typical, and low performance as shown in Table 1.

TABLE 1
STUDENT GROUPING
TOTAL N= 280

GROUP 1 70-99%ile			GROUP 2 31-69%ile			GROUP 3 1-30%ile		
WRS*	47+	N 51	WRS	30-46	N 65	WRS	1-29	N 31
MRS-	45+	N 46	MRS	27-44	N 55	MRS	1-26	N 32
TOTALS		97			120			63

*WRS Women Raw Score Range
-MRS Men Raw Score Range
N Number

---

1. George K. Bennet, et el, _A Manual for the Differential Aptitude Tests_, N. Y., The Psychological Corp., 1952, p 2

2. George K. Bennet, et el, "Supplement to the Manual of the DAT" N.Y., The Psychological Corp., 1958, p 7

3. Ralph Berdie, et el, _Counseling and the Use of Tests_, Minneapolis, University of Minnesota Press, 1962, pp 122-23

4. Wilbur L. Layton, Edward O. Swanson, "Relationship of Ninth Grade Differential Aptitude Test Scores to Eleventh Grade Test Scores and High School Rank", J. Educ. Psychol., 1958, 49, pp 153-55

The following evaluative Junior-Aptitude test score and rank-in-class criterion measures were used to judge the effectiveness of the DAT VR+NA Total in making predictions of performance and probable chances of success in post-high school education and training. Performance data was gathered on the:

1. Minnesota Scholastic Aptitude Test given in the Junior Year.
2. High School Rank, HSR, at the end of the Jr. year, after three years.
3. High school rank at the time of graduation.

The data for the three criterion measures above utilized the same grouping structure as that for the DAT predictor. The scores for the three criterion measures were arranged, according to the particular norm basis, into 70 plus, 31-69, and 1-30 percentile groups to represent high, average or typical, and low performance. The number of graduates, placing in each of the DAT predictor groups, who also placed in the high, average, or low performance groups on the criterion measures were then determined.

Data on grades earned in certain high school courses, the resulting grade point average, at graduation, and in post high school education were also examined as to performance and probable chances of success at various graded levels. Grade performance data was gathered on the following:

English 9-12 Composite
Social Studies 9-12 Composite
Math 9
Algebra I
Plane Geometry
Advanced Algebra
GPA at graduation
College GPA at end of Freshman year
College GPA at end of first marking period

General Science-Biology Composite
Physics
Chemistry
Bookkeeping
Steno I
Steno II

As Twin Valley utilizes the "Plus and Minus" in its grading system, criterion grades earned in the above courses were arranged into four groups: A- or better, B- or better, C- or better, and D- or better.

The college GPA at the end of the first marking period and the end of the first year was arranged into four groups: 3.00 or better, 2.75 or better, 2.00 or better, and under 1.99 or better. The small GPA point difference between the 3.00 and 2.75 was used as the author felt it represented a significant division in higher-than-average college achievement.

Bennet (1,2), Berdie (3), Layton and Swanson (4) seem to agree that even though each of the tests in the DAT Battery is designed with a special purpose in mind, a combination score such as the VR+NA does increase the predictability when used with certain course grades when compared to the use of battery scores singly.

But even though the DAT is highly useful in some situations, especially in longitudinal predictions, there is no guarantee of successful prediction in a given course. It therefore appears a wise procedure to test its usability in a given school situation.

Bennet (1)* further states "Many courses do require the type of learning and potential that the DAT measures...However, one final word is in order. The counselor should also be cautious in interpreting the presence of an ability in a group (or successful individual) as meaning that the ability is necessary for success in that career (or curriculum of study). Because non-degree students in Fine Arts are above average in Clerical Speed and Accuracy does not mean a prospective student must be above average in this ability to (complete) or compete successfully in the curriculum. The profiles describe what aptitudes the students do have, not what they must have."

The value in the use of the expectancy table in test interpretation is well stated by Wesman, "If a test will increase appreciably our ability to predict (even though broadly) performance in curricula or careers, let us use it--with caution, but also with gratitude. A blade not sharp enough for shaving can still be used to cut a knot."(5)

---

* George K. Bennet, p 62

"Confidence in the expectancy table entries," according to Swanson,(6) "depends on the following:

1. The size of the group must be fairly large and the data must be adequately representative of those for whom one wishes to make predictions.
2. The number of cells in the test predictor and the criterion scores must be small enough so an adequate number are found in each cell.
3. The study should cover a number of years to eliminate possible idiosyncracies present in a smaller one-year study.
4. The Expectancy Table reveals in more detailed form the data indicated by the correlation coefficients. A substantial coefficient is reflected in expectancy table entries which change sharply and systematically across row entries or down the column entries.
5. Figures obtained from one school may or may not be representative in another school. Tables are more appropriate for use with similar groups from the same institution.
6. A change in school policy such as grading practices may also change the predictive value of previous studies.
7. The data herein represent general experience, but more important to any individual school is its own experience."

RELATED STUDIES

A random sampling (3)* of juniors from 180 Minnesota school who took the DAT Battery in 1951 was correlated with the HSR to extend the existing information bearing on the usefulness of the DAT for predicting long-term academic success.

---

5. Alexander G. Wesman, "Better Than Chance", Test Service Bulletin No. 45, May, 1953, The Psychological Corp., p 9

6. Edward O. Swanson, et el, Minnesota Test-Norms and Expectancy Tables, Part II, St. Paul, Minn. Department of Education, Rev. 1963

* Ralph Berdie, pp 125-128

Of the 628 men and the 532 women in the study the following correlation coefficients resulted:

TABLE 2

Men	VR	Correlation with HSR	.56	Weight 5
Men	NA	Correlation with HSR	.57	Weight 5
Men	VR+NA	Mult. Corr. with HSR	.63	
Women	VR	Correlation with HSR	.58	Weight 25
Women	NA	Correlation with HSR	.61	Weight 3
Women	VR+NA	Mult. Corr. with HSR	.61	

A most striking difference occurs between the sexes on predicting HSR with the VR and NA Tests. For men they have equal weights (5 vs 5) whereas for the women the Verbal Test carries about eight times as much weight as the Numerical (25 vs 3). This difference may be due to the greater emphasis upon mathematics by men in high school.

From the foregoing study what implications are there for counselors?

1. The VR Tests is the best single predictor of the junior test and of the HSR.
2. The combination of the VR and the NA Test gives a significantly higher correlation with the junior measures (MSAT and HSR) than does the Verbal Test alone. These two together are almost as effective in predicting the junior measures as are the three or four best Differential Aptitude Tests.

According to Bennet (7) a second follow-up of juniors and seniors tested in 1947 was conducted in 1954-55. The first follow-up was conducted in 1950-51. Five of the original six cities cooperated in the second study. Replies were received from 59 per cent of the study group.

Findings of the study are summarized in Table 3, listing the average of the group who earned degrees, the range, and the middle 50 per cent range.

---

7. George K. Bennet, "The D.A.T.--A Seven Year Follow-Up", Test Service Bulletin, No. 49, The Psychological Corp. No., 1955 pp 1-4

TABLE 3

SEX-CLASSIFICATION	%ile Average	High	Low	Middle 50 per cent High	Middle 50 per cent Low
BOYS WHO EARNED COLLEGE DEGREES	79	95	40	90	55
BOYS WITH NO FURTHER EDUCATION	35	75	8	55	18
GIRLS WHO EARNED COLLEGE DEGREES	84	98	49	95	60
GIRLS WITH NO FURTHER EDUCATION	45	80	8	60	20

No VR + NA Total score or ranking is reported in Bennet's study. However, the score range and average is closely related so an approximation was made for the writer assumes that, with the arbitrary three groups of his study, of 30-40-30 percentile bands, the comparison averaging of the statistics of Mr. Bennet's study will place the averages well within the three above defined groups in the Twin Valley study.

The summary of the DAT study follows:

1. Those earning college degrees show a marked superiority on all tests when compared to the average of the high school groups.

2. For 118 women earning college degrees the range spread from approximately 45 to 95 percentile in both VR and NA. All graduates including those earning advanced degrees scores an 84 percentile average on both tests. Ranges are reported only for students earning college degrees and students ending their education with the high school diploma.

3. For 214 men earning college degrees the range spread from 40 to 95 in both VR and NA. All graduates including those earning advanced degrees scored a 79 percentile average on both tests.

4. For the 107 students currently classified as students, not classified as degree or non-degree students, the percentile average stood at 75, slightly lower than those who already had earned college degrees, but superior to the general population.

5. The group that attended but did not complete college also shows a superior to the high school population, but considerably less than those who attained degrees.

6. Men who attended special schools, not college, ranked close to average on some tests but registered low averages of 40 and 31 in VR and NA respectively.

7. Women who attended special schools, not college, are not markedly different from the average of high school girls.

8. Students whose education ended with the high school diploma ranked slightly below average, more marked among the men than among women. However, about 45 per cent of the women and 30 per cent of the men did not continue their education beyond high school displayed aptitudes comparable to the range of those who earned college degrees.

9. In VR, NA, and Sentences, approximately 90 per cent of those who subsequently attain college degrees are drawn from the top half of the high school population.

In summary the results of the second follow-up study reinforce the conclusions of the earlier report. (1) The DAT reveal important profile differences among high school students who enter diverse occupations and educational careers. (2) Abilities counselors expected to be distinctive in particular groups are actually found to be outstanding. (3) Characteristics of high school students, measured by the DAT bear important relations to their subsequent careers, as reported almost eight years later.

McCarten and Lyngaas (8) studies 609 students of the Edina Morningside High School using the NA Test score and Algebra I grade to predict probable success in geometry. They found that success in algebra does increase the probability of success in geometry. As an example those students earning an A in Algebra I shows 41 chances out of 100 to earn an A in geometry and 96 chances to earn a B or better. Those earning a B had 20 chances to earn an A and 56 chances to earn a B in geometry.

Using the DAT NA Test similar predictive information was found. Those earning raw scores of 31+ showed 28 chances to earn an A and 75 chances to earn a B or better in geometry. Those earning raw scores of

---

8. Mark McCarten, Jewel Lyngaas, "Expectancy Tables for Predictive Success in Geometry Based on DAT Numerical Raw Scores and Algebra Grades." An unpublished paper of individual research on the 1961-1962 sophomores.

27-30 showed 7 chances to earn an A and 56 chances to earn a B or better in geometry.

When the researchers combined the two predictors the reliability of the expectancy table information rose appreciably. As an example those who earned A in algebra and scored 31 on the NA Test showed 97 chances of earning a B or better compared with 56 chances based on the algebra grade only or 56 chances on the 27-30 NA Test score only.

In predicting the chances an A grade in geometry the DAT NA Test score of 31+ showed 28 chances and rose 90 per cent in predictive value to 53 chances based on the NA and algebra grade. Using the algebra grade of A, students showed 41 chances of earning an A grade in geometry and rose 30 per cent when the combined information to the above-mentioned 56 chances.

To summarize each of the predictors used in the study does show a significant correlation to grades earned in geometry. However, the combination DAT NA--Algebra predictor shows a more predictive usefulness than either one used separately.

Considering our attempt to improve our broad-gauge predictive judgements, some valuable information is revealed in the outcomes of the Twin Valley study. Even though the expectancy table reveals a certain broad range of probability in a possible outcome, it is not the intention that this be interpretted so as to convey that a test score in a certain group will in fact result in a subsequent score or a grade such as those developed in this study.

ANALYSIS OF GRADES EARNED IN THE TWIN VALLEY STUDY

In the DAT Manual Bennet states, "Girls' grades prove to be more predictable than boys' grades and that differing grading procedures may be a major factor."

In the analysis of grades earned, summarized in Table 4 and in the expectancy charts, Tables 5 through 13, the results of this study seem to coincide with these statements as:

1. Women's grades do decrease in a more-orderly fashion than do the men's grades as we descend from group one to group three.
2. The level of achievement is also markedly different, favoring the women to some extent.
3. Of all grades earned by the women 43 per cent were "B- or Better" whereas for the boys 28 per cent were "B- or Better".
4. A close look at the graduates in Group 1 reveals that 20 per cent of the girls and 11 per cent of the boys earned an A- or higher GPA. Almost 75 per cent of the girls earned a "B- or higher" GPA whereas only 50 per cent of the boys posted this average.
5. In Group 2, 33 per cent of the girls earned a GPA of "B- to B+" compared to a 12 per cent margin for the boys. No GPA of "A- or better" was earned in this group.
6. In Group 3, 13 per cent of the girls earned a "B- to B+" GPA whereas no boys earned a similar GPA.
7. Of all grades earned in all high school courses by women in Group one, 31 per cent were "A- or Better", while for the men in Group one, 16 per cent were "A- or Better."
8. Of all grades earned in all high school courses by women in Group two, 5 per cent were "A- or Better", while for the men in Group two 1 per cent were "A- or Better" grades.
9. Of all grades earned in Group three, 28 per cent of the women earned "C- to B+" grades and 21 per cent of the boys posted this achievement.
10. The DAT VR+NA scores do overlap. In almost all course curricula a few who earned grades of B, C, and/or D also earned comparable DAT scores to those earning grades of A.
11. The resulting expectancy tables do indicate that Group 1 earns higher grades than Groups 2 or 3 and Group 2 earns higher grades than Group 3. The writer feels that the DAT is performing as a reasonably reliable predictor when compared to the other performance criteria. One exception is found in the math and science categories in Groups 2 and 3. A sizable number of students have not selected these elective courses. This makes it impossible to make a statistically adequate prediction, even though results in other areas for Groups 2 and 3 performance do indicate success would be highly questionable, especially in Group 3.

SUBSEQUENT TEST AND GRADES EARNED

Groups 1, 2, or 3 based on the DAT VR+NA results in substantial performance in an identical group in the MSAT and HSR criterion measures when compared to entering college freshmen.

Tables 20-22 shows that graduates in Group one on the DAT predictor post a 38-59 chance of placing in an identical group based on the MSAT. Using the HSR results in a 29 to 50 chance for the women and a 28 to 58 chance for the men of placing in an identical group when compared to entering college freshmen.

In each criterion measures performance in Group two based on the DAT predictor is nearly duplicated in chances to Group one's performance. In other words on the DAT predictor results in similar chances for Group two placement on the MSAT and HSR performance criteria when compared to entering college freshmen.

In grades earned performance criteria women do tend to outperform the men on an average of 15 chances out of 100. In Group one according to the DAT predictor the women posted a 62 to 92 chance of earning above average grades of B- or higher as compared to 44 to 70 for the men.

In Group two the women scored 1 to 63 chances of earning a B- or higher as compared to 5 to 40 for the men, and in Group three the women posted a 1 to 20 chance of earning a B- or higher as compared to 1 to 7 for the men.

In considering grades earned at the A- or higher level, a sharper separation is more in evidence with 12 to 14 chances separating the women from the men. In Group one the women posted an 18 to 51 chance as compared to the men's 6 to 38. In Group two the women posted a 1 to 21 chance as compared to the men's 1 to 7 and in Group three both the women and the men posted 1 chance out of 100 of earning an A- or higher.

In the performance on subsequent tests and grades-earned criteria the DAT predictor seems to function as a reliable index of future achievement as the grades earned do regress as we descend from Group one to Group three. In other words a substantial coefficient is evident as the entries change sharply and systematically across the rows of entries and in the majority of the curriculum an adequate number are found in each cell.

ANALYSIS OF COLLEGE PERFORMANCE

The performance of graduates attending college is summarized in Tables 14 through 22. Expectancy tables were constructed for Moorhead State College, Concordia College, Moorhead, and North Dakota State University because each represent major choice consideration of Twin Valley graduates. The combined table, Table 17, functions equally well for all practical purposes. In general the study revealed the following:

1. Women seem to perform at a slightly higher level than the men on most college classes during the first marking period and during the first year.

2. Performance at college of men and women in DAT Group one indicates that a student might expect significantly better-than-average chances, 90 out of 100, of earning acceptable grades at the 2.00, "C" average or higher, as shown in Table 17 for the combined grouping of all colleges.

3. The number of the students in a few groups categories is too small to make very reliable predictions. From Table 17, Group 3 is a good example. Only 4 men and women in Group 3 enrolled in a college curricula. Three subsequently dropped before the end of the first year. It may be that this statistic in itself is significant. A small number choosing college, resulting eventually in a high drop out rate.

4. A further study of college performance in Table 17 reveals that six women in Group 2, five men in Group 1 and three men in Group 3 eventually dropped out of college. As far as the writer is able to determine, the rest remained in or finished the prescribed course of study.

5. Students in Group 2 on Table 17 experience about 60 chances in a 100 of earning GPA of 2.00 or higher but considerably less chance, as compared to 52, of earning a 2.75 or higher when compared to Group 1.

6. Statistics from the tables indicate a slightly less chance of earning grades of 2.75 and higher at Concordia and other private colleges when compared to either Moorhead State and the Universities in this study. The small size of the groups indicates a word of caution in using this statistic.

7. The DAT VR+NA predictor when compared to the criterion college GPA does prove to be statistically significant, and seems to correlate well to the college achievement as shown by the GPA. Taking into account the limitations of tests for predictive purposes the results of this study should prove useful in counseling with the potential college student at Twin Valley.

ANALYSIS OF BUSINESS COLLEGE AND TRADE-TECHNICAL SCHOOL PERFORMANCE

Table 18 Business Colleges

For the most part, graduates have attended Interstate Business College in Fargo. A sufficient number of data is not available for the traditional group breakdown found in the regular college tables. However, in Table 18 a good representation, 10-9-9, is found in Groups 1, 2, and 3 of the 29 graduates attending business college.

It appears as though graduates do tend to perform at a high GPA level and that the chances for success in the curriculum is also high, 96 chances out of 100.

Table 19 Trade and Technical Schools

Similarly, a substantial number of data is not available from the trade and technical schools for the group breakdown found in the regular college tables. Table 19 contains 3, 8, and 8 for Groups 1, 2, and 3. The table reveals a fairly high chance for success with 78 chances to 84 at the end of the year for a student to perform at the commonly acceptable 2.00 GPA level.

SUMMARY OF POST-HIGH SCHOOL EDUCATION

Post-High school education, shown in Table 24, is an important factor in the plans of Twin Valley High School graduates, especially for the men.

In Group one, 55 per cent of the women and 68 per cent of the men graduates received some type of college, trade, technical, or business education while Group two 25 per cent of the women and 47 per cent of the men, and in Group three 26 per cent of the women and 37 per cent of the men did similarly.

In Group one 35 per cent of the women and 56 per cent of the men graduates pursued some type of regular college education, while 14 and 31 per cent of the women and men graduates respectively in Group two enrolled in college. Twelve per cent of the men in Group three did similarly.

It would appear that the drive to pursue a college education: (1) is a stronger factor in the plans for the men than the women graduates, (2) is stronger in Group one than in either Groups 2 or 3, (3) regresses steadily as we descend from Group one to Group three.

It would appear that many graduates capable of successfully completing some type of post-high school education do not for various reasons attempt this form of preparation for their place in the world of work.

ANALYSIS OF TWIN VALLEY DROPOUTS

Why is the number of graduates in Group three considerably smaller than the number in either Group one or two? This question came up repeatedly as the study progressed.

The permanent dropout file provided some of the answer to this question. The transcript folders of all dropouts who would have graduated with the classes of 1957-1966 were examined and a tally of groups was made of each group classification according to the DAT predictor. The transcript folder records lacked some vital information:

1. A few might possibly have repeated a grade in elementary school and technically would not have been included in the classes of 1957-66.
2. A few were included even though the writer was not absolutely positive a transfer or a dropout status existed at the time the dropout left school.
3. Eleven dropouts had no record of taking the DAT Battery as freshmen even though each would have graduated during 1957-66.

As might be expected, in most cases one or more failing marks were found on the transcript folder.

Had all remained to graduate there would have been 52-71-48 and 47-67-55 in Groups 1, 2, and 3 of the women and men respectively, which, in the writer's opinion would be a fairly good cross section.

The resulting figures reveal that 64 to 70 per cent of the dropouts scored in Group three of the DAT predictor, and that the dropout rate was about 16 per cent.

ANALYSIS OF OCCUPATIONS

Table 25 lists the job titles as reported by the graduates of 1957-1962. The list is not a 100 per cent representation, but does serve to give some idea of the job levels of those students according to the DAT group classification. It follows that because Group 1 as a whole secured more education beyond high school that the job listings do point more toward the professional level job. No further analysis of this information was made at this time.

ACKNOWLEDGMENT

The writer wishes to express his sincere thanks to Edward Swanson and Gary Joslyn of the Student Counseling Bureau for their advisory assistance, evaluation, and encouragement during the progress of the study. Also thanks goes to three able clerical assistants, Margaret Strommen, Barbara Kjono, and Mrs. Renae Hoekstra, each of whom performed a major role in the completion of the study.

And of course thanks is in order to the students in the study, and the college registrars who willingly and promptly supplied the needed data for the study.

TABLE 4

SUMMARY OF GRADES EARNED IN ALL COURSE CATEGORIES
Twin Valley High School Graduates of 1957-1966

WOMEN DAT GROUP	NUMBER OF FINAL GRADES GIVEN IN EACH CATEGORY											PERCENT OF GRADES EARNED			
	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	A	B	C	D
1	57	75	60	64	53	25	58	19	3	10	0	83	50	25	7
2	16	10	38	51	57	84	103*	59	45	26	6	17	42	55	42
3	0	0	3	4	18	19	44*	31	33	26	32	0	8	20	51
TOTALS	73	85	101	119	128	128	205	109	81	62	38 = 1129				

MEN DAT GROUP															
1	21	40	33	56	47	17	63*	42	19	21	10	92	66	29	21
2	0	5	12	21	33	57	88	78	34	24	15	8	32	52	33
3	0	0	1	1	1	4	36	37	30	40	42	0	2	19	47
TOTALS	21	45	46	78	81	78	187	157	83	85	67 = 928				

DAT GROUP	ANALYSIS OF GPA OF GRADUATES NUMBER OF STUDENTS EARNING A GPA OF:				TOTAL IN GROUP
	A- & A	B- to B+	C- to C+	D- to D+	
W-1	10	27	13	1	51
M-1	5	18	20	3	46
W-2	0	22	37	6	65
M-2	0	7	42	6	55
W-3	0	4	15	12	31
M-3	0	0	16	16	32

GROUP STATISTICS ON GRADES EARNED IN ALL COURSE CATEGORIES

WOMEN GRADES	NUMBER	PER CENT	MEN GRADES	NUMBER	PER CENT
A	158	13	A	66	7
B	348	30	B	205	21
C	442	39	C	422	45
D	181	16	D	235	25
	1129			928	

TABLE 5

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates of 1957-1966

Group 1
Sex W N=51

DAT VR+NA TOTAL*
Raw Score 47+

APTITUDE AND ACHIEVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following as his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minn. Scholastic Aptitude Test MSAT**	Minn. Jrs.	71	97	99	46
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	62	92	98	51
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	54	97	99	46
SENIOR HSR	Local	70	98	99	51

HIGH SCHOOL SUBJECT GRADES EARNED	Local	A- or Higher	B- or Higher	C- or Higher	D- or Higher	
GRADUATE GPA		19	72	98	99	51
ENGLISH COMP		25	74	98	99	51
SOCIAL STUDIES COMP		23	68	96	99	51
MATH 9		22	33	88	99	9
ALGEBRA I		27	67	95	99	43
PLANE GEOMETRY		29	83	99	99	24
ADVANCED ALGEBRA		35	88	99	99	17
SCIENCE-BIOLOGY COMP		33	62	88	99	51
PHYSICS		18	63	99	99	11
CHEMISTRY		29	62	99	99	24
BOOKKEEPING		51	78	99	99	41
STENO I		37	79	99	99	29
STENO II		48	92	99	99	25

* Form A, 1961 Revised Norms
** Minnesota Test-Norms and Expectancy Tables, 1963 Revision

TABLE 5

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates of 1957-1966

Group 1
Sex W N=51

DAT VR+NA TOTAL*
Raw Score 47+

APTITUDE AND ACHIEVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following as his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minn. Scholastic Aptitude Test MSAT**	Minn. Jrs.	71	97	99	46
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	62	92	98	51
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	54	97	99	46
SENIOR HSR	Local	70	98	99	51

HIGH SCHOOL SUBJECT GRADES EARNED	Local	A- or Higher	B- or Higher	C- or Higher	D- or Higher	
GRADUATE GPA		19	72	98	99	51
ENGLISH COMP		25	74	98	99	51
SOCIAL STUDIES COMP		23	68	96	99	51
MATH 9		22	33	88	99	9
ALGEBRA I		27	67	95	99	43
PLANE GEOMETRY		29	83	99	99	24
ADVANCED ALGEBRA		35	88	99	99	17
SCIENCE-BIOLOGY COMP		33	62	88	99	51
PHYSICS		18	63	99	99	11
CHEMISTRY		29	62	99	99	24
BOOKKEEPING		51	78	99	99	41
STENO I		37	79	99	99	29
STENO II		48	92	99	99	25

* Form A, 1961 Revised Norms
** Minnesota Test-Norms and Expectancy Tables, 1963 Revision

TABLE 6

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates 1957-1966

Group 2
Sex W . N= 65

DAT VR+NA TOTAL*
Raw Score 30-46

APTITUDE AND ACHIEVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following as his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minn. Scholastic Aptitude Test MSAT**	Minn. Jrs.	1	80	99	51
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	26	67	99	65
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	39	72	99	51
SENIOR HSR	Local	29	78	99	65

HIGH SCHOOL SUBJECT GRADES EARNED	Local	A- or Higher	B- or Higher	C- or Higher	D- or Higher	
GRADUATE GPA		1	34	90	99	65
ENGLISH COMP		1	40	89	99	65
SOCIAL STUDIES COMP		1	26	76	99	65
MATH 9		7	25	84	99	27
ALGEBRA I		1	14	70	99	41
PLANE GEOMETRY		1	1	62	99	8
ADVANCED ALGEBRA		1	50	99	99	4
SCIENCE-BIOLOGY COMP		1	20	76	99	65
PHYSICS		1	25	50	99	4
CHEMISTRY		1	1	69	99	13
BOOKKEEPING		13	50	93	99	58
STENO I		21	63	97	99	41
STENO II		15	58	94	99	39

* Form A,1962 Revised Norms

** Minnesota Test-Norms and Expectancy Tables, 1963 REvision

TABLE 7

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates of 1957-1966

Group 3
Sex W N=31

DAT VR+NATOTAL*
Raw Score 1-29

APTITUDE AND ACHIEVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following as his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minn. Scholastic Aptitude Test MSAT**	Minn. Jrs.	4	28	99	25
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	3	35	99	31
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	1	36	99	25
SENIOR HSR	Local	3	41	99	31

HIGH SCHOOL SUBJECT GRADES EARNED	Local	A- or Higher	B- or Higher	C- or Higher	D- or Higher	
GRADUATE GPA		1	12	64	99	31
ENGLISH COMP		1	19	70	99	31
SOCIAL STUDIES COMP		1	12	48	99	31
MATH 9		1	1	30	99	22
ALGEBRA I		1	1	40	99	10
PLANE GEOMETRY						
ADVANCED ALGEBRA						
SCIENCE-BIOLOGY COMP		1	6	45	99	31
PHYSICS						
CHEMISTRY						
BOOKKEEPING		1	14	37	99	28
STENO I		1	20	80	99	15
STENO II		1	18	90	99	11

* Form A, 1961 Revised Norms
** Minnesota Test-Norms and Expectancy Tables, 1963 REvision

TABLE 8

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates of 1957-1966

Group I
Sex M N= 46

DAT VR+NA TOTAL*
Raw Score 45+

APTITUDE AND ACHIEVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following as his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minn. Scholastic Aptitude Test MSAT**	Minn. Jrs.	60	96	99	33
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	58	91	99	46
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	36	87	99	33
SENIOR HSR	Local	45	84	99	46

HIGH SCHOOL SUBJECT GRADES EARNED	Local	A- or Higher	B- or Higher	C- or Higher	D- or Higher	
GRADUATE GPA		10	50	93	99	46
ENGLISH COMP		06	47	84	99	46
SOCIAL STUDIES COMP		10	50	86	99	46
MATH 9		30	70	100	99	10
ALGEBRA I		17	51	80	99	41
PLANE GEOMETRY		16	48	90	99	31
ADVANCED ALGEBRA		27	68	86	99	22
SCIENCE-BIOLOGY COMP		15	56	86	99	46
PHYSICS		14	44	77	99	27
CHEMISTRY		20	65	82	99	20
BOOKKEEPING		38	50	88	99	26
STENO I						
STENO II						

* Form A, 1961 Revised Norms

** Minnesota Test-Norms and Expectancy Tables, 1963 REvision

TABLE 9

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates of 1957-1966

Group 2 | DAT VR+NA TOTAL*
Sex M N=55 | Raw Score 27-44

APTITUDE AND ACHIEVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following as his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minne. Scholastic Aptitude Test MSAT**	Minn. Jrs.	14	46	99	49
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	23	74	99	55
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	40	42	99	55
SENIOR HSR	Local	10	72	99	49

HIGH SCHOOL SUBJECT GRADES EARNED	Local	A- or Higher	B- or Higher	C- or Higher	D- or Higher	
GRADUATE GPA		1	12	89	99	55
ENGLISH COMP		1	10	80	99	55
SOCIAL STUDIES COMP		1	21	83	99	55
MATH 9		1	40	95	99	22
ALGEBRA I		1	05	61	99	34
PLANE GEOMETRY		1	16	83	99	12
ADVANCED ALGEBRA		1	50	99	99	6
SCIENCE-BIOLOGY COMP		03	18	70	99	55
PHYSICS		07	21	78	99	14
CHEMISTRY		05	27	82	99	17
BOOKKEEPING		02	28	78	99	42
STENO I						
STENO II						

* Form A, 1961 Revised Norms

** Minnesota Test=Norms and Expectancy Tables, 1963 Revision

TABLE 10

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates of 1957-1966

Group 3
Sex M N=32

DAT VR+NA TOTAL*
Raw Score 1-28

APTITUDE AND ACHIEVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following as his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minn. Scholastic Aptitude Test MSAT**	Minn. Jrs.	1	34	99	26
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	1	28	99	26
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	1	07	99	26
SENIOR HSR	Local	1	21	99	32

HIGH SCHOOL SUBJECT GRADES EARNED	Local	A- or Higher	B- Or Higher	C- Or Higher	D- or Higher	
GRADUATE GPA		1	1	50	99	32
ENGLISH COMP		1	1	40	99	32
SOCIAL STUDIES COMP		1	1	25	99	32
MATH 9		1	4	41	99	24
ALGEBRA I		1	1	44	99	9
PLANE GEOMETRY		1	1	66	99	3
ADVANCED ALGEBRA		1	1	1	99	3
SCIENCE-BIOLOGY COMP		1	1	40	99	32
PHYSICS		1	1	50	99	2
CHEMISTRY		1	1	50	99	2
BOOKKEEPING		6	7	65	99	26
STENO I						
STENO II						

* Form A, 1961 Revised Norms
** Minnesota Test-Norms and Expectancy Tables, 1963 Revision

TABLE 11

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates of 1957-1966.

GROUP 1 Sex M&W N= 97	DAT VR + NA TOTAL* Raw Score

APTITUDE AND ACHIEVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following as his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minn. Scholastic Aptitude Test MSAT**	Minn. Jrs.	66	97	99	82
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	No sample			
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	46	92	99	78
SENIOR HSR	Local	57	91	99	97

HIGH SCHOOL SUBJECT GRADES EARNED	Local	A- or Higher	B- or Higher	C- or Higher	D- or Higher	
GRADUATE GPA		15	61	95	99	97
ENGLISH COMP		15	61	91	99	97
SOCIAL STUDIES COMP		16	58	91	99	97
MATH9		26	52	94	99	19
ALGEBRA I						86
PLANE GEOMETRY		20	63	94	99	55
ADVANCED ALGEBRA		30	76	92	99	39
SCIENCE-BIOLOGY COMP		24	60	87	99	97
PHYSICS		15	50	84	99	38
CHEMISTRY		24	64	90	99	53
BOOKKEEPING		45	68	90	99	67
STENO I		38	77	99	99	31
STENO II		48	88	99	99	27

* Form A, 1961 Revised Norms

** Minnesota Test-Norms and Expectancy TAbles, 1963 Revision

TABLE 12

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates of 1957-1966

Group 2
Sex M & W N=120

DAT VR+NA TOTAL*
Raw Score

APTITUDE AND ACHIEVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minn. Scholastic Aptitude Test MSAT**	Minn. Jrs.	17	71	99	100
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	No Sample			
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	4	59	99	100
SENIOR HSR	Local	20	55	99	120

HIGH SCHOOL SUBJECT GRADES EARNED	Local	A- or Higher	B- or Higher	C- or Higher	D- or Higher	
GRADUATE GPA		1	24	90	99	120
ENGLISH COMP		1	26	85	99	
SOCIAL STUDIES COMP		1	24	80	99	
MATH 9		4	32	85	99	49
ALGEBRA I		1	10	66	99	75
PLANE GEOMETRY		1	10	75	99	20
ADVANCED ALGEBRA		1	50	99	99	10
SCIENCE-BIOLOGY COMP		1	19	70	99	120
PHYSICS		5	22	77	99	18
CHEMISTRY		3	16	76	99	30
BOOKKEEPING		1	35	85	99	92
STENO I		21	63	95	99	41
STENO II		15	58	94	99	39

* Form A, 1961 Revised Norms

** Minnesota Test-Norms and Expectancy TAbles, 1963 REvision

TABLE 13

SUMMARY OF TEST PERFORMANCE AND GRADES EARNED
Graduates of 1957-1966

Group 3
Sex M & W N= 63

DAT VR+NA TOTAL*
Raw Score

APTITUDE AND ACHEIVEMENT CRITERIA BEING COMPARED TO THE DAT VR+NA PREDICTOR.	NORM GROUP Minn. Local	A student whose DAT VR+NA score fall in this group might consider the following as his or her chances out of 100 of placing in the listed groups or earning certain grades.			
		GROUP ONE	GROUP TWO	GROUP THREE	N
Minn. Scholastic Aptitude Test MSAT**	Minn. Jrs.	1	31	99	51
JUNIOR RANK IN CLASS** HSR	Minn. Jrs.	No Sample			
JUNIOR-COMBINATION APTITUDE TEST AND RANK IN CLASS CAR	Minn. Col. Fresh.	1	21	99	51
SENIOR HSR	Local	3	31	99	63

HIGH SCHOOL SUBJECT GRADES EARNED	LOcal	Aθ or Higher	B- or Higher	C- or Higher	D- or Higher	
GRADUATE GPA		1	6	55	99	63
ENGLISH COMP		1	9	55	99	
SOCIAL STUDIES COMP		1	6	34	99	
MATH 9		1	2	36	99	46
ALGEBRA I		1	1	42	99	19
PLANE GEOMETRY		1	1	66	99	3
ADVANCED ALGEBRA		1	1	1	99	3
SCIENCE-BIOLOGY COMP		1	3	42	99	63
PHYSICS		1	1	50	99	2
CHEMISTRY		1	1	50	99	2
BOOKKEEPING		1	11	61	99	54
STENO I		1	20	80	99	15
STENO II		1	18	90	99	11

* Form A, 1961, Revised Norms
** Minnesota Test-Norms and Expectancy Tables, 1963 REvision

TABLE 14

MOORHEAD STATE COLLEGE

Expectancy Table based on the Grade Point Average of Freshmen entering college during the Fall of 1958 through 1965.

Predications based on the DAT VR+NA Total

DAT V+R GR %ILE	WOMEN N in Group	Chances in 100 of FRESHMEN WOMEN Earning a GPA at the end of the FIRST MARKING PERIOD of:				Chances in 100 of FRESHMEN FEMALES Earning a GPA at the end of the FRESHMEN YEAR of:			
		3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1 70+	8	87	88	98	99	62	75	98	99
2 31-69	5	1	1	80	99	1	1	98	99
3 1-30	1	1	1	1	99	1	1	1	1

DAT V+R GR %ile	MEN N in Group	Chances in 100 of FRESHMEN MEN Earning a GPA at the end of the FIRST MARKING PERIOD of:				Chances in 100 of FRESHMEN MALES Earning a GPA at the end of the FRESHMEN YEAR of:			
		3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1 70+	13	7	23	84	99	7	15	77	84
2 31-69	8	1	1	50	99	1	12	62	99
3 1-30	2	1	1	1	50	1	1	1	50

DAT V+R GR %ILE	COMB. N in Group	Chances in 100 of FRESHMEN MEN AND WOMEN Earning a GPA at the end of FIRST MARKING PERIOD OF:				Chances in 100 of FRESHMEN MEN AND WOMEN Earning a GPA at the end of FRESHMEN YEAR OF:			
		3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1 70+		38	47	90	99	28	38	76	81
2 31-69	13	1	1	61	99	1	7	77	99
3 1-30	3	1	1	1	99	1	1	1	33

The above data includes:
1 community college, Men
3 Out of State, State Colleges, Men
1 Jr. College, Woman

TABLE 15

CONCORDIA COLLEGE AND OTHER PRIVATE COLLEGES

Expectancy Table based on the Grade Point Average of Freshman entering college during the Fall of 1958 through 1965.

Predications based on the DAT VR+NA Total

DAT V+R GR %ILE	WOMEN N in Group	Chances in 100 of FRESHMEN WOMEN Earning a GPA at the end of the FIRST MARKING PERIOD of:				Chances in 100 of FRESHMEN FEMALES Earning a GPA at the end of the FRESHMEN YEAR of:			
		3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1 70+	5	1	40	80	99	20	40	80	99
2 31-69	4	1	1	25	99	1	1	25	75
3 1-30	0	0	0	0	0	0	0	0	0

DAT V+R GR %ILE	MEN N in Group	Chances in 100 of FRESHMEN MEN Earning a GPA at the end of the FIRST MARKING PERIOD of:				Chances in 100 of FRESHMEN MALES Earning a GPA at the end of the FRESHMEN YEAR of:			
		3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1 70+	2	50	97	98	99	50	97	98	99
2 31-69	6	33	34	66	99	33	34	50	89
3 1-30	0	0	0	0	0	0	0	0	0

DAT V+R GR %ILE	COMB. N in Group	Chances in 100 of FRESHMEN MEN AND WOMEN Earning a GPA at the end of FIRST MARKING PERIOD OF:				Chances in 100 of FRESHMEN MEN AND WOMEN Earning a GPA at the end of FRESHMEN YEAR OF:			
		3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1 70+	7	14	57	85	99	28	57	85	99
2 31-69	10	21	21	30	99	20	21	40	99
3 1-30	0	0	0	0	0	0	0	0	0

The above data includes:
1 Gustavus Adolphus Woman
1 St. Olaf Woman
2 Out of state, private colleges, Women

TABLE 16

NORTH DAKOTA STATE UNIVERSITY AND OTHER UNIVERSITIES

Expectancy TAble based on the Grade Point Average of Freshmen Entering college during the Fall of 1958 through 1965.

Predications based on the DAT VR+NA Total

DAT V+R GR %ILE	WOMEN N in Group	Chances in 100 of FRESHMEN WOMEN Earning a GPA at the end of the FIRST MARKING PERIOD of;				Chances in 100 of FRESHMEN FEMALES Earning a GPA at the end of the FRESHMEN YEAR of:			
		3.00 & Higher	2.75-299 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1 70+	4	50	51	75	99	25	26	75	99
2 31-69	1	96	97	98	99	96	97	98	99
3 1-30	0	0	0	0	0	0	0	0	0

DAT V+R GR %ILE	MEN N in Group	Chances in 100 of FRESHMEN MEN EArning a GPA at the end of the FIRST MARKING PERIOD of:				Chances in 100 of FRESHMEN MALES Earning a GPA at the end of the FRESHMEN YEAR of:			
		3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1 70+	11	37	45	90	99	40	60	80	99
2 31-69	3	1	1	98	99	1	1	98	99
3 1-30	1	1	1	1	99	0	0	0	0

DAT V+R GR %ILE	COMB. N in Group	Chances in 100 of FRESHMEN MEN AND WOMEN Earning a GPA at the end of FIRST MARKING PERIOD OF:				Chances in 100 of FRESHMEN MEN AND WOMEN Earning a GPA at the end of FRESHMEN YEAR OF:			
		3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1 70+	14	42	50	85	99	35	50	80	99
2 31-69	4	25	26	98	99	25	26	98	99
3 1-30	1	1	1	1	99	0	0	0	0

The above data includes:
2 University of Minnesota Women
1 University of North Dakota Woman

TABLE 17

ALL JUNIOR COLLEGES AND FOUR-YEAR COLLEGES

Expectancy Table based on the Grade Point Average of Freshman Entering college during the Fall of 1958 through 1965.

Predications based on the DAT VR+NA Total

DAT V+R GR %ILE		WOMEN N in Group	Chances in 100 of FRESHMEN WOMEN Earning a GPA at the end of the FIRST MARKING PERIOD of:				Chances in 100 of FRESHMEN FEMALES Earning a GPA at the end of the FRESHMEN YEAR of:			
			3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & HIgher	2.00-2.74 & Higher	-1.99 & Up
1	70+	17	52	64	88	99	41	52	81	94
2	31-69	10	10	10	60	99	10	10	60	90
3	1-30	1	1	1	1	99	0	0	0	0

DAT V+R GR %ILE		MEN N In Group	Chances in 100 of FRESHMEN MEN Earning a GPA at the end of the FIRST MARKING PERIOD of:				Chances in 100 of FRESHMEN MALES Earning a GPA at the end of the FRESHMEN YEAR OF:			
			3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1	70+	24	25	41	87	99	25	41	79	91
2	31-69	17	11	11	64	99	11	17	64	99
3	1-30	3	1	1	1	99	1	1	1	33

DAT V+R GR %ILE		COMB. N In Group	Chances in 100 of FRESHMEN MEN AND WOMEN Earning aGPA at the end of FIRST MARKING PERIOD of:				CHANCES in 100 of FRESHMEN MEN AND WOMEN Earning a GPA at the end of FRESHMEN YEAR of:			
			3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
1	70+	40	37	52	90	99	32	47	85	97
2	31-69	27	11	11	62	99	11	14	66	96
3	1-30	4	1	1	1	99	1	1	1	25

TABLE 18

BUSINESS COLLEGES

Expectancy Table based on the Grade Point Average of Freshmen entering school during the Fall of 1958 through 1965.

Predications based on the DAT VR+NA Total
Men and Women Combined
All DAT Groups Combined

N In Group	Chances in 100 of men and women Earning a GPA at the end of their course or first year of:			
	3.00 & Higher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
29	96	96	99	99

--Two men withdrew before completing course.

TABLE 19

TRADE AND TECHNICAL SCHOOLS

Expectancy Table based on the Grade Point Average of Freshmen entering school during the Fall of 1958 through 1965.

Predications based on the DAT VR+NA Total
Men and Women Combined
All DAT Groups Combined

N in Group	Chances in 100 of men and women earning a GPA at the end of the FIRST MARKING PERIOD of:				Chances in 100 of men and women earning a GPA at the end of the FIRST YEAR of:			
	3.00 & Higher	2.75-2.99 & HIgher	2.00-2.74 & Higher	-1.99 & Up	3.00 & HIgher	2.75-2.99 & Higher	2.00-2.74 & Higher	-1.99 & Up
19	36	42	78	99	42	42	84	94
	--One man wit[illegible]rew before completing high course							

TABLE 20*

SUMMARY OF MSAT TEST PERFORMANCE IN COMPARISON TO ENTERING COLLEGE FRESHMEN AT MINNESOTA COLLEGES

GRADUATES OF 1957-1966
MEN AND WOMEN COMBINED

MINNESOTA SCHOLASTIC APTITUDE TEST (MSAT)	CHANCES IN 100 OF PLACING IN THE CORRESPONDING COLLEGE NORMED GROUP					
DAT VR+NA GROUP 1	GROUP ONE		GROUP TWO		GROUP THREE	
	RSc	Chance	RSc	Chance	RSc	Chance
State Col	38	59	26-37	91	1-25	99
Junior Col	40	55	26-39	91	1-25	99
Liberal Arts	48	38	34-47	71	1-33	99
U of Minn	46	39	31-45	79	1-30	99
DAT VR+NA GROUP 2						
State Col	38	10	26-37	54	1-25	99
Junior Col	40	7	26-39	54	1-25	99
Liberal Arts	48	2	34-47	20	1-33	99
U of Minn	46	3	31-45	33	1-30	99
DAT VR+NA GROUP 3						
State Col	38	1	26-37	15	1-25	99
Junior Col	40	1	26-39	15	1-25	99
Liberal Arts	48	1	34-47	1	1-33	99
U of Minn	46	1	31-45	3	1-30	99

* Edward O. Swanson, (6) pp 66-67 Minnesota Test-Norms and Expectancy Tables, 1963 Revision

TABLE 21*

SUMMARY OF HIGH SCHOOL RANK PERFORMANCE
IN COMPARISON TO ENTERING COLLEGE FRESHMEN AT MINNESOTA COLLEGES

GRADUATES OF 1957-1966
WOMEN

HIGH SCHOOL RANK	GROUP 1		GROUP 2		GROUP 3	
	%ILE	Chance	%ILE	Chance	%ILE	Chance
DAT VR+NA GROUP 1						
State Col	86+	41	57-85	74	1-56	99
Junior Col	83+	50	56-82	82	1-55	98
Liberal Arts	92+	29	73-91	62	1-72	94
U of Minn	88+	41	64-87	72	1-63	98
DAT VR+NA GROUP 2						
State Col	86+	9	57-85	52	1-56	99
Junior Col	83+	9	56-82	52	1-55	99
Liberal Arts	92+	1	73-91	27	1-72	99
U of Minn	88+	3	64-87	40	1-63	99
DAT VR+NA GROUP 3						
State Col	86+	3	57-85	22	1-85	99
Junior Col	83+	3	56-82	22	1-55	99
Liberal Arts	92+	0	73-91	9	1-72	99
U of Minn	88+	0	64-87	12	1-63	99

TABLE 22

SUMMARY OF HIGH SCHOOL RANK PERFORMANCE
IN COMPARISON TO ENTERING COLLEGE FRESHMEN AT MINNESOTA COLLEGES

GRADUATES OF 1957-1966
MEN

HIGH SCHOOL RANK	GROUP ONE		GROUP TWO		GROUP THREE	
DAT VR+NA GROUP 1	%ILE	Chance	%ILE	Chance	%ILE	Chance
State Col	65+	58	36-64	84	1-35	99
Junior Col	67+	50	34-66	84	1-33	99
Liberal Arts	84+	28	54-83	65	1-53	99
U of Minn	81+	32	48-80	71	1-47	99
DAT VR+NA GROUP 2						
State Col	65+	16	36-64	60	1-35	99
Junior Col	67+	14	34-66	60	1-33	99
Liberal Arts	84+	5	54-83	40	1-53	99
U of Minn	81+	7	48-80	40	1-47	99
DAT VR+NA GROUP 3						
State Col	65+	1	36-64	15	1-35	99
Junior Col	67+	1	34-66	15	1-33	99
Liberal Arts	84+	1	54-83	3	1-53	99
U of Minn	81+	1	48-80	9	1-47	99

---

* Minnesota Test-Norms and Expectancy Tables, 1963 Revision pp 69-70

TABLES 23 and 24

SUMMARY OF POST-HIGH SCHOOL TRAINING
Graduates of 1957-1965

WOMEN DAT GROUP	TOT IN GROUP	TOTAL ENROLLING IN:			PER CENT OF GROUP:			NO FUR TRAIN
		COLLEGE	TRADE-TECH	BUS	COLLEGE	TRADE	BUS	
1	51	18	2	8	35%	4%	16%	45%
2	65	10	2	5	15%	3%	7%	75%
3	31 147	0 28	4 8	4 17	0 19%	13% 5%	13% 11%	74%
MEN DAT GROUP								
1	46	26	3	3	56%	6%	6%	32%
2	55	17	6	3	31%	11%	5%	53%
3	32 133	4 47	6 15	2 8	12% 36%	19% 11%	6% 6%	63%

TWIN VALLEY HIGH SCHOOL DROPOUTS
WHO WOULD HAVE GRADUATED IN THE CLASSES OF 1957-66

WOM DAT GROUP	N	% of Total	% of Group	MEN DAT GROUP	N	% of Total	% of Group
1	1	5%	1%	1	1	3%	2%
2	6	25%	8%	2	12	33%	18%
3	17 24	70%	35%	3	23 36	64%	41%
+ 5 estimated to have been in Group 2 or 3				+ 6 estimated to have been in Group 2 or 3			

Graduates 1957-66	304
Dropouts 1957-66	71
Total Expected Graduates	375
Dropout Rate	16%

TABLE 25

CLASSES OF 1957-1962
ANALYSIS OF OCCUPATIONS AS OF AUGUST, 1966
DAT Groups 1-2-3

GROUP I	WOMEN	MEN
PROFESSIONS AND TECHNOLOGICAL OCC.		
Teacher	2	6
Minister		1
Peace Corps	1	
Engineer		3
Pharmacy Salesman		1
Medical Technologist	1	
Nurse	1	
SALES AND OFFICE OCCUPATIONS		
Bookkeeper	1	
House wife & Bookkeeper	1	
Receptionist	1	
Housewife & Clerical work	1	
Secretary	2	
Computer Programmer		1
Implement parts salesman		1
Finance office		1
Accountant	2	
Ass't Traffic Mgr.		1
MISCELLANEOUS		
Electrician		2
Electrical technician		1
Service	1	
Housewife	7	

GROUP III	WOMEN	MEN
PROFESSIONS AND TECHNOLOGICAL OCC.		
Teacher		1
SALES AND OFFICE OCCUPATIONS		
Bookkeeper		2
Secretary	2	
Accountant		2
Housewife & Office Work	1	
TRADES AND TECHNICAL OCCUPATIONS		
Mechanic		1
Plumber's helper		1
Carpenter		3
MISCELLANEOUS		
N.O.C. Air Force		1
Vending Co. Service		1
Traffic Recording Service		1
Farmer		4
Service		3
Housewife	13	

GROUP II	WOMEN	MEN
PROFESSIONS AND TECHNOLOGICAL OCC.		
Teacher		5
Minister		1
Forest Service		1
Engineer		1
College Dorm Couns	1	
Medical Technologist	1	
Housewife & Med Tech	1	
Nurse	1	
Housewife & Nurse	1	
SALES AND OFFICE OCCUPATIONS		
Bookkeeper	1	
Bank Clerk	1	
Housewife & Bank Clerk	1	
Secretary	2	
Housewife & Secretary	2	
Office Work	2	
Housewife & Office Work	1	
Cashier	1	
Grocery Business		1
Accountant		2
Ass't Mgr. Gas Station		1
TRADES AND TECHNICAL OCC.		
Mechanic		1
Beautician	1	
Sales Drafting		1
Carpenter		1
MISCELLANEOUS		
Farmer		2
Farm Work		1
Service		2
Housewife	21	

NO CLASSIFICATION	WOMEN	MEN
PROFESSIONS AND TECHNOLOGICAL OCC.		
Teacher		1
SALES AND OFFICE OCCUPATIONS		
Bookkeeper		1
MISCELLANEOUS		
Club Hostess	1	
Boeing Aircraft		1
Farmer		1
General Work		1
Housewife	3	

BIBLIOGRAPHY

1. Bennet, George K., et el, A Manual for the Differential Aptitude Tests, N. Y., The Psychological Corp., 1952

2. Bennet, George K., 'Supplement to the Manual of the DAT", N. Y., The Psychological Corp., May, 1958

3. Berdie, Ralph, et el, Counseling and the Use of Tests, Minneapolis, Univ. of Minn. Press, 1962 pp 122-130

4. Layton, Wilbur L., and Swanson, Edward O., "Relationship of Ninth Grade Differential Aptitude Test Scores to 11th Grade Test Scores and High School Rank", J. Educ. Psychol., 1958, 49, 153-55 Summarized in Test Service Bulletin, No.53, Sept. 1958, N. Y. The Psychological Corp.

5. Wesman, Alexander G., "Better Than Chance", Test Service Bulletin No. 45, May, 1953, N. Y., The Psychological Corp., pp 8-12

6. Swanson, Edward O., et el, Minnesota Test-Norms and Expectancy Tables, Part II, St. Paul, Minn. Department of Education, Rev 1963 pp 87-94

7. Bennett, George K., 'The DAT--A Seven Year Follow-Up", Test Service Bulletin No. 49, Nov., 1955, N. Y., The Psychological Corp., pp 11-14

8. Wesman, Alexander G., "Expectancy Tables--A Way of Interpreting Test Validity", Test Service Bulletin No. 38, Dec., 1949, N. Y., The Psychological Corp., pp 11-15

VT 002 545

1966 Farm Business Management Report and Individual Farm Business Analysis Guide.

O'Connell, Edward J.
Saint Cloud Area Vocat-Tech. School, Minn. Dept. of Agr.

Pub Date - 66
MF AVAILABLE IN VT-ERIC SET 31p.

*FARMERS, *FARM MANAGEMENT, *FARM ACCOUNTS, *ADULT FARMER EDUCATION,

Minnesota,

Economic data from 240 records of farmers enrolled in farm management programs conducted by 14 high school vocational agriculture departments in Central Minnesota were compiled for this summary report. The educational programs consisted of (1) class sessions, (2) class discussions, meetings, or tours, (3) individual on-farm instruction, and (4) the analysis of farm business records. The analysis of a farm business is basic to fact finding, reasoning, and problem identification activity employed by managers. As a part of the case study basic to the instructional activity of the teacher and the managerial activities of the farmer, the individual farm business analyses were prepared by the local agriculture teacher with the cooperation, understanding, and confidence of the farmers after which they were prepared by the area analysis center. The range of operator labor earnings ranged from a loss of $2,813 to a high of $20,107. The average of the 240 farms was $5,866. Other information is summarized in 28 tables which include (1) cash statement of expenses, (2) cash statement of receipts and earnings, (3) feed costs and returns on beef breeding herds, (4) comparison of farm management factors on the 24 highest of the 46 farms in the high earning group and on the 24 lowest of 46 farms in the low earning group, and (5) summary of household, living, and personal expenses. (WB)

VT 002 545

ED022065

1966

FARM BUSINESS MANAGEMENT REPORT

and

INDIVIDUAL FARM BUSINESS ANALYSIS GUIDE

by the

Agriculture Department

St. Cloud Area Vocational - Technical School

Saint Cloud Public Schools

Saint Cloud, Minnesota

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Cooperating Agencies

State and County Services of U. S. D. A.

Institute of Agriculture, University of Minnesota

Vocational Division, Minnesota Department of Education

VT002545

1966 FARM BUSINESS MANAGEMENT REPORT

Agriculture Department, Area Vocational-Technical School
St. Cloud Public Schools, St. Cloud, Minnesota

TABLE OF CONTENTS

Title	Page
Introduction	2
Farm Business Analysis Guide for 1967	6
Range of Operator Labor Earnings	7
Cash Statement of Expenses	8
Cash Statement of Receipts and Earnings	9
Accrual Statement of Expenses and Decreases	10
Accrual Statement of Returns, Increases and Earnings	11
Analysis of Dairy Herd Feed Costs and Returns	12
Graphic Comparisons on Dairy Management	13
Feed Costs and Returns on Other Dairy Cattle	14
Feed Costs and Returns on Beef Breeding Cattle Herds	15
Feed Costs and Returns on Feeder Cattle	16
Feed Costs and Returns on Sheep	17
Feed Costs and Returns on Producing Feeder Pigs	18
Feed Costs and Returns on Market Hogs	19
Statement of Farm Assets, Liabilities and Net Worth	20
Distribution of Work Output and Livestock Production	21
Five Year Average Yields (Base Period 1961-65)	22
Comparison of Crops Grown, Acre Yields and Land Use	23
Operation Costs for Farm Power, Buildings and Equipment Use	24
Measures of Farm Organization and Management Efficiency	25
A Four Year Comparison of Farm Management Factors	26
1966 Thermometer Chart of Management Measures	27
Comparison of Farm Management Factors on the High Earnings Group	28
Comparison of Farm Management Factors on the Low Earnings Group	29
Summary of Household and Personal Expenses	30

Prepared by:
Edward J. O'Connell, Area Vo-ag Program Coordinator

For:
Agriculture Departments in Fourteen central Minnesota
Counties: Anoka, Benton, Chisago, Hennepin, Isanti,
Kanabec, Meeker, Mille Lacs, Morrison, Ramsey, Sherburne,
Stearns, Todd and Wright.

INTRODUCTION

The economic data included in this 1966 Farm Business Management Report was prepared from records kept by farmers in the Minnesota Farm Account Book, published by the Institute of Agriculture, University of Minnesota.

These farmers were also enrolled in a program of farm management education, conducted by the high school agriculture departments in a fourteen-county area of central Minnesota. The educational program included four parts: Class sessions, group discussions - meetings or tours, individual on-farm instruction and the analysis of farm business records.

The individual farm business analysis has been prepared by the local vo-ag instructor with the cooperation, understanding and confidence of the individual farmer. The analysis is a part of the case study basic to the instructional activity of the teacher and the managerial activity of the farmer. The instructor makes the analysis the first two years the farmer is enrolled in a farm management program.

After the farmer's second year of enrollment in the educational program, the individual farm business analysis may be prepared for the local farmer and teacher at the area analysis center. The analysis of the individual farm business record is prepared on a set of work sheets developed from the analysis system used by the Agriculture Economics Department at the University of Minnesota. Copies of the farmer's individual business analysis are confidential and may not be released for the use of others unless the farmer grants permission.

The following list of agriculture instructors submitted analysis reports from their local schools:

School	Instructor	Time Plan	Number of Accounts
Albany	James Kastanek	2	10
"	Ronald Novotny	2	10
Browerville	George Bigalke	4	18
Cokato	Allen Dalen	a	4
Evansville	Dennis Lehto	4	7
Foley	Roland Bjorklund	2	11
"	Lawerence Reiten	4	35
Kimball	Leo Wirth	a	5
Litchfield	Arvid Anderson	2	10
Long Prairie	Robert Johnson	4	27
" "	William Ladwig	4	18
Milaca	J. Robert Larson	1	2
North Branch	Wilton Johnson	a	4
Osakis	Norman Bombach	a	10
Paynesville	LeRoy Hillbrand	a	6
Rush City	Douglas Hanson	a	2
St. Cloud	Raymond Anderson	4	35
" "	Robert Underwood	2	26

Total: 14 schools, 18 instructors, 240 records

Time plan: 4 is full-time adult teacher 2 is half-time adult
1 is quarter-time adult a is an adult class

The farm business record analysis program at St. Cloud started in 1946 by way of cooperative help from Dr. Truman Nodland and others in the Agriculture Economics and Agricultural Extension Division of the University of Minnesota. The program continued as a part of the local Veterans Farm Training Program under the G. I. Bill until termination of that program in 1954.

The farm management education, record keeping and record analysis program as a part of the area vocational technical school, began in 1955. Our first program started with the analysis of twelve farm records from the local center. The writer began work as a part-time area vo-ag program coordinator during the 1955-56 school year. During this same period, Dr. Milo Peterson introduced farm management as a part of the agriculture teacher-training program at the University of Minnesota. The present program for the local farmers is a result of the joint efforts of four agencies: (1) the Agriculture Education Division, State Department of Education, (2) the University of Minnesota, (3) the St. Cloud area Vocational School and (4) the local high school.

The program of instruction in record keeping is now taught in all vo-ag departments to the high school boys. The analysis plan developed here is used for high school class instruction. This same analysis plan is the one used by adult farmers. Adult farmer programs, specifically organized around the farm management concept of education, are located in about fifty-five percent of the schools in the area. This year, 18 instructors in 14 schools submitted 240 individual farm record analyses for preparation of a summary report that would be representative of the farmers in the area-wide program.

The use of electronic-data processing has been given considerable study at our center and throughout the state since some area centers are buying data-processing services from the Agriculture Records Cooperative at Madison, Wisconsin. Experiences have been gained in the preparation of individual analyses and area report summaries based on data for the past year. Consideration has not been given to use of data processing in the preparation of materials effecting the decisions on management of the future.

In this area, we expect that each future year will require more staff and work with a larger number of farms. Managerial need will have to be met on a more timely basis. Information will be needed in increased amounts and variety. This information should first be made available in a well-kept farm record book. The data must be summarized on a per-farm basis in a form that can be understood and used directly by the farmer, the instructor, the banker or others who may work with the farmer. It may also be assumed that electronic processing would provide new methods and a variety of resource information. These findings gathered from the experiences of many should be available in a form applicable to the individual character of farms and farmers.

Although the St. Cloud center has provided manually perhaps more than is shown on EDP forms, we expect to consider data processing in terms of the factors listed in the preceeding paragraph. We will also consider the accounting and analysis services offered by other sources which may or may not provide opportunity for a program of farm management education.

The accounting procedures used in arriving at results in the figures in the analysis are developed on the cash basis, the accrual basis and the enterprise basis.

The cash statement results in a figure called "net cash farm income." This figure is the result of all income, minus expense, with credit or cash transactions handled on a cash basis. Net cash farm income is the result of circulating cash or credit dollars separate from a consideration of a farm capital or net worth statement. Net cash income is what is left for savings, to pay debts, income taxes, family living and acquire capital control for operation of the business. Total cash farm sales are a measure of the money volume that would be circulated by farmers at urban trade centers. The sales income from farms considered in this summary amount to about $4,400,000 of volume. The ratio of cash expense to cash income indicates the cash expense used to buy a dollar of income and have something left for non-farm expenses.

Accrual accounting differs from cash accounting in that we separate the costs of using fixed capital and change in inventory values from operating costs for the entire business or any part of it.

The debit or input part of accrual accounting is the beginning inventory value plus any additional inventory purchased during the year. The credit or outgo part of accrual accounting is the ending inventory value plus any inventory sold during the year. The difference between the debit and credit total would be a net increase or decrease in the inventory value of farm capital used. The capital invested in the farms used in this area summary amounts to $10,600,000.

In the case of farm machinery equipment, buildings and fences, this difference is shown as depreciation on Form 2 of the per-farm analysis and the accrual statement of expenses in this summary. Depreciation is a fixed cost for use of fixed inventory capital that needs to be replaced as it wears out, becomes obsolete or traded off.

When we add the costs or charges for operating the fixed capital to the net increase or decrease in the value of the capital, we have what may be called accrued costs.

Enterprise analysis requires one to use both cash and accrual accounting to arrive at all costs that apply to the livestock or crop enterprises.

In the case of livestock, the difference between the debit and credit values of the livestock themselves is called net increase or decrease in the value of the livestock. When farmers market beef, pork or lamb, they expect to realize a profit over the feed cost used to get the increased weight of the stock.

When one considers dairy cows, he establishes a net increase or decrease in the value of the herd. When one adds the value of the product to the change in herd inventory value, he has then accrued a total of production, plus or minus the inventory change. From that figure, one subtracts the feed cost to get a return over feed cost for production of milk and maintaining the production units or cows. If we could sort out and total other non-feed costs specific to the cows and milk produced and subtract the total of those costs from the return over feed, we would have extended the allocation of costs to the specific dairy cow enterprise on a complete accrual basis. At the present time, neither the account book nor the analysis is in a form that may be used for a study of non-feed costs on a summary basis. In many individual cases, farmers and teachers are making detailed accrued cost studies on production of crops, as well as production of meat, milk or poultry.

In enterprise accounting, we separate the calves and young stock into a specific enterprise in order to take a separate look at the financial results on the various ways of handling dairy youngstock. We have also separated the feeder pig production enterprise from the market hog production enterprise.

We were unable to make a poultry enterprise analysis that would provide sound data for comparison study or evaluation of twenty farm poultry flocks. Flock sizes varied from two flocks of one thousand to eighteen flocks of fifty to three hundred hen size. We do not have data on some commercial egg or broiler production units that have been developing in this area.

The costs of clerical help and supplies used in preparation of this farm-business analysis are paid for by the farmer. Mrs. John Seeley has been in charge of clerical work at the area center, assisted by Mrs. Tom Mealey and Mrs. Willard Van Vickle. The individual farm business analysis forms and the covers of the area report were printed by Mr. James Leigh, Graphic Arts Department at Technical High School. The educational costs of salary and mileage have been underwritten by the school boards at the local high schools as an investment in their communities.

The area vo-ag program coordinator is employed by the area vocational technical school to work with schools in a geographic area designated by the state supervisor of agriculture education. He developes and coordinates agriculture education activities in the area that cannot be accomplished by the singular effort of a school. His work is with the agriculture instructors or their school administrators rather than with students enrolled in programs. The coordinator may work in cooperation with the state supervisory staff although he is not a supervisor. He may conduct surveys, research or studies and carry on in-service teacher training. He may also develop teaching aids, instructional materials or curriculum guides. The coordinator may also travel for conferences with agriculture teachers or others who work in cooperation with the area and state program in agriculture education.

The cooperative and progressive work done by agriculture instructors during the development of the farm management education program is resulting in increased interest in the program among forty three high schools in the area.

The cooperation received from individuals at the University of Minnesota, the Minnesota State Department of Education, the U.S.D.A. agencies, school boards and administrators is most sincerely appreciated by all teachers.

This program is carried on for the purpose of helping farm families. Their cooperation in keeping records, attending class sessions and accepting individual on-farm instruction has been the reason for the growth of the program. Farmers or others who want to enroll in a program, or establish a program in their area, should contact the local vo-ag instructor, the local superintendent of schools, or the area vo-ag program coordinator at St. Cloud.

Agriculture Department
Area Vocational School
Saint Cloud, Minnesota

FARM BUSINESS ANALYSIS GUIDE FOR 1967

The analysis of a farm business is considered basic to the fact finding, the reasoning and the problem indentification activity used in the decision making process that managers follow. Analysis may take place at any time the need arises. Analysis may apply to any part of the business such as a feed lot operation for a period of time or an enterprise or other need. The analysis of a complete farm record takes place at the end of the year, Consequently the annual analysis measures the results rather than the expectations from management. The individual business analysis is based on the facts from the record book organized into an annual summary for a case study. The area summary of analysis is prepared for comparison study.

FARM RECORD KEEPING PROCEDURE

1- The farmer keeps the Minnesota Farm Record Book.
2- The instructor and the farmer close the farm record book.
3- The instructor and the farmer prepare the livestock and the crop and feed check.

FARM BUSINESS ANALYSIS PROCEDURE

A- By the local vo-ag instructor
- -- The record book stays at the farm or at the local school
- -- The vo-ag instructor prepares the individual farm record analysis
- -- The area analysis center prepares the area summary report

Cost $________

B- By the area analysis center
- --The record book is sent to the area analysis center
- --The area center prepares the individual farm record analysis
- --The area analysis center prepares the area summary report

Cost $________

C- By the area analysis center and the EDP computer center
- --The record book with the check sheets is sent to the area center.
- --Data from the record book is transferred to work sheets that are sent to the data processing center to be put on punch cards.
- --The data processing center makes the calculations and a printout of the individual analysis which is sent back to the local school
- --The individual analysis is checked against the record book and a copy is forwarded to the local teacher and farmer for their use. This analysis is a copy of the "your farm" column from tables in the University format of analysis.
- --The data processing center calculates the area summary data and the area analysis center compiles the area report.

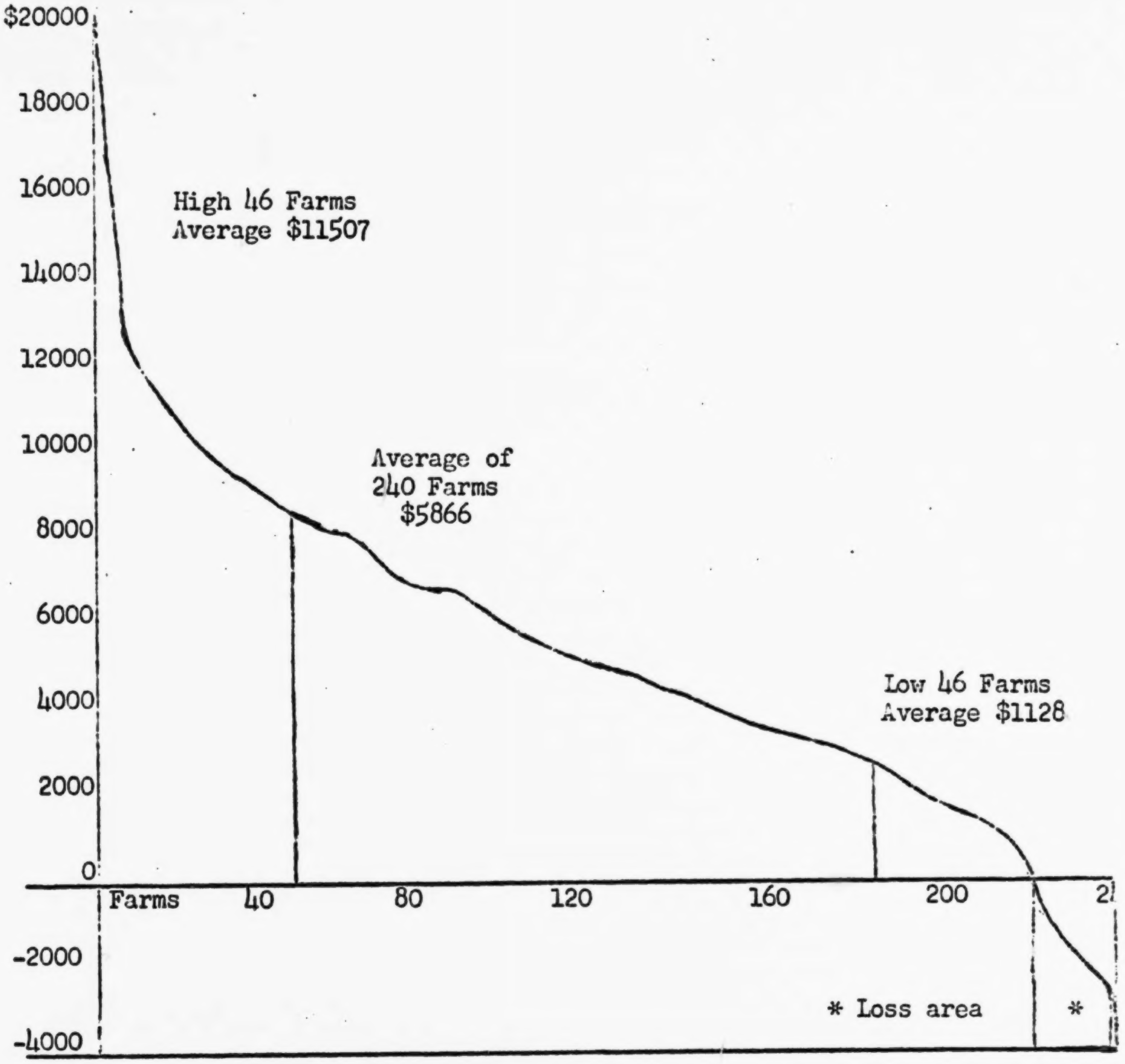
Cost $________

CHOICE OF FARM BUSINESS ANALYSIS PLANS

Teachers in the St. Cloud area are using Plan A at the end of the first and second year of a farmers enrollment in a program. It is advisable to use Plan B as soon as the preparation of the individual analysis in Plan A has become more in the nature of service than an educational activity for the farmer. Teachers, as well as farmers, who understand and have prepared the per farm analysis may be able to make case studies from the analysis prepared by a clerical worker.

Plan C may be used if arrangements are previously made with the area analysis center who in turn contracts with the data processing center for their services.

Range of Operator Labor Earnings
240 Farms - 1966



The range of operator labor earnings in the top group of farms (46) was from $8886 to a top of $20107. The middle group, representing 148 farms, or 60 per cent of the total farms, ranged from $2813 to $8804. The range of earnings in the low group of 46 farms ranged from a loss of $2813 to a gain of $3060. One extreme loss situation exceeded the low end of the loss range.

There were 35 individual farm business analysis reports from farmers enrolled in a one year farmer general course sponsored by the Staples Area Vocational School at Browerville and Long Prairie. This program was funded by P.L. 87-415 Man-Power Development and Training Act. Earnings in that group ranged from a loss earnings of $217 to a top earnings figure of $9224. In this summary, two of the farms were in the top group, fifteen in the middle group and eighteen in the low earnings group.

Cash Statement of Expenses
Farmers grouped on basis of operator labor earnings

Items of Comparison Compare to Form 1 Analysis of Your Farm	Your Farm	Average of all Farms	Average of High 20%	Average of Low 20%
Dairy cows bought		$ 443.27	$ 628.63	$ 590.61
Other dairy cattle bought		209.15	160.13	100.44
Beef breeding cattle bought		32.61	----	53.26
Feeder cattle bought		374.61	613.86	446.56
Hogs bought		305.22	144.61	879.83
Sheep bought		11.77	1.30	31.85
Horses bought		6.44	--	--
Chickens bought		72.41	169.75	7.35
Livestock breeding fees		105.05	149.10	61.15
Miscellaneous livestock expense		356.43	599.50	240.10
Feed bought		3321.95	4677.83	2448.75
Misc. crop expense - fertilizer		1085.27	1939.19	615.31
Custom work hired		655.81	956.46	481.08
Mach. equip. bought		3528.15	6207.96	2340.34
Real estate bought		457.63	898.91	1005.54
Gas, oil, grease - farm share		772.28	1064.24	696.52
Repr., upkp., tractor, truck, auto		499.60	704.47	457.97
Repair and upkeep of real estate		219.75	262.17	211.82
Repair, upkeep, crop machinery		384.86	603.82	307.09
Repair, livestock equipment		111.01	138.64	71.71
Wages - hired labor		311.51	670.43	240.93
Telephone - farm share		54.59	65.34	54.69
Electricity - farm share		244.06	305.71	208.91
Taxes, real & personal property		607.84	775.42	521.39
Farm rent expense		365.05	802.26	189.43
General farm expense		209.94	295.24	140.03
Total cash purchases		$ 14746.26	$22834.97	$12402.66

Comparison of Cash Expenses to Cash Income

Average cash purchases		$ 14746.26	$22834.97	$12402.66
Average cash sales		$ 18111.99	$28415.29	$12381.47
Total amount of cash purchases made per dollar cash sales		$ .80	$ .77	$ .98

Cash Statement of Receipts and Earnings
Farmers grouped on basis of operators labor earnings

Items of Comparison Compare to Form 1 Analysis of Your Farm	Your Farm	Average of All Farms	Average of High 20 %	Average of Low 20 %
Dairy cows sold		$ 1308.36	$ 1747.13	$ 1034.92
Whole milk sold		9674.39	13610.45	5822.91
Other dairy cattle sold		1116.11	1491.35	770.54
Beef breeding cattle sold		27.27	23.48	58.42
Feeder cattle sold		684.88	1704.22	598.98
Hogs sold		2407.37	2864.95	2885.92
Sheep sold		34.64	93.35	25.79
Wool sold		2.16	--	1.83
Horses sold		8.13	--	--
Chickens sold		19.57	7.45	3.18
Eggs sold		302.42	411.73	37.75
Crops sold		1107.77	3002.75	549.01
Machine equipment sold		215.21	736.88	37.62
Real Estate sold		116.23	567.61	--
Gas tax refunded		82.04	112.66	68.59
Income from off farm work		544.74	1163.16	259.08
Miscellaneous farm income		448.36	860.57	213.89
Cash rent received		12.34	17.55	13.04
Total cash farm sales		$ 18111.99	$ 28415.29	$ 12381.47
-Total cash farm purchases		14746.26	22834.97	12402.66
Net cash farm income		$ 3365.73	$ 5580.32	$ -21.19
+Increase in farm capital (1)* or		$ 4750.96	$ 9014.30	$ 3420.25
-Decrease in farm capital (2)**		357.26	520.75	756.18
+Family living off the farm		417.36	500.85	398.64
Net farm receipts		$ 8176.79	$ 14574.72	$ 3041.52
-Board of hired labor		$ 59.66	$ 114.26	$ 53.77
Return to capital and unpaid family labor		8117.13	14460.46	2987.75
-5% Interest on investment		2143.79	2886.07	1709.17
-Unpaid family labor		106.91	67.39	149.65
Operators labor earnings		$ 5866.43	$ 11507.00	$ 1128.93
*(1) Number of farms with an increase in farm capital		189	43	26
**(2) Number of farms with a decrease in farm capital		41	3	20

Change in capital on the cash statement represents the increase or decrease in the total value of the difference between the total farm beginning and ending inventory.

Accrual Statement of Expenses and Decreases
Farmers grouped on basis of operator labor earnings

	Items of Comparison Compare to Form 2 (Machinery, Equipment, Buildings)	Your Farm	Average of ALL Farms	Average of High 20%	Average of Low 20%
1.	Beginning inventory		$ 14704.86	$ 20699.20	$ 10951.98
2.	Mach., equip. bought		3528.15	6207.96	2340.34
3.	Total of 1 + 2		$ 18233.01	$ 26907.16	$ 13292.32
4.	Mach., equip., sold		$ 215.21	$ 736.88	$ 37.62
6.	Ending inventory		16104.89	23521.68	11745.16
7.	Total of 4 + 5 + 6		$ 16320.10	$ 24258.56	$ 11782.78
8.	Depreciation mach., equip. buildings (3-7)		$ 1912.91	$ 2648.60	$ 1509.54
9.	Horse feed				
10.	Custom work hired		$ 655.81	$ 956.46	$ 481.08
11.	Gas, oil, grease bought		772.28	1064.24	696.52
12.	Repair auto, truck, tractor		499.60	704.47	457.97
13.	Repair and upkeep real estate		219.75	262.17	211.82
14.	Repair and upkeep of crop mach.		384.86	603.82	307.09
15.	Repair of livestock equipment		111.01	138.64	71.71
16.	Electricity - farm share		244.06	305.71	208.91
17.	Total operation cost (8 thru 16)		$ 4800.28	$ 6684.11	$ 3944.64
18.	Custom work income		$ 237.88	$ 791.33	$ 70.35
19.	Gas tax refund		82.04	112.66	68.59
20.	Net operation cost (17 -(18 + 19) (See page 24 of report)		$ 4480.36	$ 5780.12	$ 3805.70
21.	Livestock breeding fees		$ 105.05	$ 149.10	$ 61.15
22.	Miscellaneous livestock exp.		356.43	599.50	240.10
23.	Wages of hired labor		311.51	670.43	240.93
24.	Board of hired labor		59.66	114.26	53.77
25.	Value of unpaid family labor		106.91	67.39	149.65
26.	Telephone - farm share		54.59	65.34	54.69
27.	Personal prop. & R. estate tax		607.84	775.42	521.39
28.	Farm rental expenses		365.05	802.26	189.43
29.	General farm expense		209.94	295.24	140.03
30.	5% Interest on investment		2143.79	2886.07	1709.17
31.	Total accrued decreases operating costs and expenses		$ 8801.13	$ 12205.13	$ 7166.01

Change in farm capital on the accrual statement of expenses is specific to machinery, equipment and buildings.

Change in farm capital on the accrual statement of returns is specific to the inventory change on each livestock enterprise.

Accrual Statement of Returns, Increases and Earnings
Farmers grouped on basis of operator labor earnings

Items of Comparison Compare to Form 3 (Livestock and Crops)	Your Farm	Average of All Farms	Average of High 20%	Average of Low 20%
1. Ending inventory		$ 10389.07	$ 14135.61	$ 8394.51
2. Livestock sales		5606.33	7931.93	5377.75
3. Butchered		248.47	305.33	234.55
4. Transferred out		1150.01	1850.02	596.63
5. Total 1 + 2 + 3 + 4		$ 17393.88	$ 24222.89	$14603.44
6. Beginning inventory		$ 9283.00	$ 12559.12	$ 7727.48
7. Livestock purchases		1455.48	1718.28	2109.90
8. Transferred in		1150.01	1850.02	596.63
9. Total 6 + 7 + 8		$ 11888.49	$ 16127.42	$10434.01
10. Increase in livestock (5-9)		$ 5505.39	$ 8095.47	$ 4169.43
11. Livestock products sold		$ 9978.97	$ 14022.18	$ 5862.49
12, Products used at home		$ 132.81	$ 158.68	$ 124.69
13. Products fed to stock		159.34	173.23	158.47
14. Total value of products 11 + 12 + 13		$ 10271.12	$ 14354.09	$ 6145.65
15. Value of products plus inventory increase 10 + 14		$ 15776.51	$ 22449.56	$10315.08
Dairy cattle		$ 10004.13	$ 14060.29	$ 5974.35
Other dairy cattle		2737.70	3953.45	1700.17
Beef cattle		31.33	34.44	92.75
Feeder cattle		426.08	1074.56	429.06
Hogs		2254.26	2929.89	2037.69
Sheep		40.08	74.12	22.49
Poultry		280.71	322.81	58.57
Horses		2.22	--	--
Total value of products plus inventory increase		$ 15776.51	$ 22449.56	$10315.08
16. Feed cost for livestock		9341.72	12555.78	6900.38
17. Return over feed cost (15-16)		6434.79	9893.78	3414.70
18. Crops, seed & feed increase		7465.21	12568.40	4464.58
19. Off farm labor income		306.86	371.83	188.73
20. Miscellaneous farm income		460.70	878.12	226.93
21. Total Returns plus increase (Form 3)		$ 14667.56	$ 23712.13	$ 8294.94
22. Total expense plus decrease (Form 2)		$ 8801.13	$ 12205.13	$ 7166.01
23. Operators labor earnings		$ 5866.43	$ 11507.00	$ 1128.93
Relation of expense + decreases to returns + increases		$ .80	$ .50	$ .86

Analysis of Dairy Herd Feed Costs and Returns
Herds grouped on butterfat production per cow

Items of Comparison Compare to Form 4 Analysis of Your Herd	Your Farm	Average of 212 Farms	Average of High 20%	Average of Low 20%
Per herd data:				
Number of cows kept		28.5	31.2	25.6
Pounds of milk produced		271280#	385893#	175369#
Pounds of butterfat produced		10239#	15642#	6280#
Total return per dollar feed cost		$ 1.88	$ 2.07	$ 1.71
Net increase in herd value		$ 53.03	$ 134.11	$ 99.95
Total value of product		$ 10773.05	$15359.80	$ 6762.80
Total returns-increase+products		$ 10826.08	$15493.91	$ 6862.75
Total feed cost per herd		5919.46	7939.31	4265.84
Return over feed cost per herd		$ 4906.62	$ 7554.60	$ 2596.91
Per cow data:				
Pounds of butterfat produced		342.5#	442.2#	241.8#
Pounds of milk produced		9583.0#	12397.0#	6741.0#
Net increase in cow value		$ 2.59	$ 5.60	$ 5.59
Product sold in form of milk		$ 358.91	$ 476.04	$ 246.33
Products used in the home		4.90	4.67	5.81
Products fed to stock		6.55	7.13	6.03
Total value of product		$ 370.36	$ 487.84	$ 258.17
Total returns-increase+produce		$ 372.95	$ 493.44	$ 263.76
Total feed cost per cow		203.67	252.16	162.10
Return over feed cost per cow		$ 169.28	$ 241.28	$ 101.66
Total return per lb butterfat		$ 1.08	$ 1.12	$ 1.09
Feed cost per lb of butterfat		.60	$ .57	$ .67
Net return per lb butterfat		.48	$ .55	$ .42
Total return per cwt. of milk		$ 3.91	$ 4.00	$ 3.94
Feed cost per cwt. of milk		2.17	2.04	$ 2.41
Net return per cwt. of milk		$ 1.74	$ 1.96	$ 1.53
Work units per herd (10 hr. day)		285	312	256
Net return per work unit		$ 16.93	$ 24.13	$ 10.17

Analysis of Dairy Herd - Continued

Items of Comparison Compare to Form 4 Analysis of Your Farm	Your Farm	Average of 212 Farms	Average of High 20 %	Average of Low 20 %
Feed consumption per cow:				
Concentrates	________	4490#	5829#	4472#
Silage	________	5.1T	5.4T	4.6T
Roughage	________	2.7T	2.8T	2.6T
Feed Cost per cow:				
Concentrates	________	$ 101.28	$ 143.44	$ 68.43
Silage	________	38.02	40.54	34.82
Roughage	________	55.43	62.14	49.89
Pasture	________	8.94	6.04	8.96
Total feed cost per cow	________	$ 203.67	$ 252.16	$ 162.10
Per pound value of concentrates	________	$ .023	$ .025	$ .015
Average market price per cwt.milk	________	$ 3.88	$ 3.96	$ 3.86
Average market price per lb b.f.	________	$ 1.08	$ 1.11	$ 1.07
Average butterfat test received	________	3.6%	3.6%	3.6%

Graphic Comparisons on Dairy Management

Pounds of Butterfat Per Cow	Pounds of Milk Per Cow	Feed Cost Per Cwt. of Milk	Feed Cost Per Cow	Return Per Dollar Feed Cost
550#	16600#	4.00	$400.	$2.85
510	15200	3.65	360.	2.65
470	13800	3.30	320.	2.45
430	12400	2.95	280.	2.25
390	11000	2.60	240.	2.05
350	9600 (Ave.)	2.25	200.	1.85
310	8200	1.90	160.	1.65
270	6800	1.55	120.	1.45
230	5400	1.20	80.	1.05
190	4000	.85	40.	.85

Feed Costs and Returns on Other Dairy Cattle
Farmers grouped on basis of butterfat production per cow

Items of Comparison Compare to Form 6 Analysis of Your Farm	Your Farm	Average of 211 Farms	Average of High 20 %	Average of Low 20 %
On Basis of Animal Unit:				
Increase in value per a.u.		$ 181.70	$ 193.68	$ 163.82
Feed cost per a.u.		117.14	137.45	100.80
Return over feed cost per a.u.		$ 64.56	$ 56.23	$ 63.02
Number of animal units		16.9	20.1	13.5
Number of work units		59.2	70.4	47.2
Net return per work unit		$ 17.69	$ 16.29	$ 18.00
Feed consumed per a.u.				
Concentrates		1313#	1894#	757#
Silage		3.5T	3.8T	3.5T
Roughage		2.0T	2.1T	2.2T
Milk products		244#	225#	173#
Feed costs per a.u.				
Concentrates		$ 34.58	$ 49.75	$ 20.23
Silage		25.73	28.61	23.62
Roughage		37.41	41.63	38.36
Pasture		8.59	6.18	6.35
Milk products		10.83	11.28	12.24
Total		$ 117.14	$ 137.45	$ 100.80
On Basis of Total Enterprise:				
Increase in value per enterprise		$ 2907.26	$ 3845.68	$ 2065.41
Feed cost per enterprise		2023.37	2702.84	1469.32
Return over feed cost per enterprise		$ 883.89	$ 1142.84	$ 596.09
Total return per dollar feed cost		$ 1.65	$ 1.54	$ 1.85
Feed consumed per enterprise				
Concentrates		24829#	36005#	11793#
Silage		62.0T	80.1T	49.5T
Roughage		33.1T	39.2T	32.0T
Milk products		3960#	4781#	2689#
Feed costs per enterprise				
Concentrates		$ 642.08	$ 967.10	$ 313.94
Silage		456.23	601.05	353.52
Roughage		630.65	813.52	570.91
Pasture		130.34	108.41	96.99
Milk products		164.07	212.76	133.96
Total		$ 2023.37	$ 2702.84	$ 1469.32

The method of handling young stock varies considerably from those who raise better quality herd replacements to those who sell young stock off as market cattle. Because of the variation, we haven't combined young stock with dairy cow figures.

Feed Costs and Returns on Beef Breeding Cattle Herds

Compare to Form 6 Analysis of Your Farm	Your Farm	Average 7 Farms	High 4 Farms	Low 3 Farms
Number of animal units		19.4	19.3	19.5
Increase in value of herd		$1221.54	$1489.28	$ 864.56
Total feed cost for herd		1581.96	768.26	2666.87
Return over feed cost per herd		-360.42	721.02	-1802.31
Return per dollar feed cost		$ .99	$ 1.98	$ -.33
Total return per animal unit		$ 38.10	$ 77.05	$ -13.83
Feed cost per animal unit		72.97	39.42	117.71
Return over feed cost per animal unit		$ -34.87	$ 37.63	$-131.54
Total number of work units		67.9	67.6	68.3
Return over feed per work unit		$ -9.79	$ 10.76	$ -37.18
Feed consumed per animal unit				
Concentrates		173#	68#	314#
Silage		2.2T	1.3T	3.5T
Roughage		1.6T	1.6T	1.6T
Value of feed consumed per animal unit				
Concentrates		$ 6.20	$ 1.37	$ 12.65
Silage		27.47	6.18	55.86
Roughage		28.34	23.19	35.20
Pasture		10.96	8.68	14.00
Total feed cost		$ 72.97	$ 39.42	$ 117.71
Feed consumed per enterprise				
Concentrates		4940 #	984#	10216#
Silage		63.9T	24.9T	115.9T
Roughage		36.3T	30.4T	44. T
Feed costs per enterprise				
Concentrates		$ 172.20	$ 19.68	$ 375.56
Silage		476.60	128.05	941.32
Roughage		683.45	456.03	986.66
Pasture		249.71	164.50	363.33
Total feed cost		$1581.96	$ 768.26	$2666.87

Animal unit = 1¼ beef cows

Feed Costs and Returns on Feeder Cattle
Farmers grouped on return per dollar feed cost

Items of Comparison Compare to Form 6 Analysis of Your Farm	Your Farm	Average of 14 Farms	Average of High 20 %	Average of Low 20 %
On basis of cwt:				
Increase in value per cwt.		$ 27.47	$ 29.55	$ 25.39
Feed cost per cwt.		23.80	21.23	26.37
Return over feed cost per cwt.		$ 3.67	$ 8.32	$ -.98
Total return per dollar feed cost		$ 1.22	$ 1.43	$ 1.01
Feed consumed per cwt.				
Corn		727#	1074#	379#
Grain		31#	32#	31#
Commercial feed		87#	62#	112#
Total concentrates		845#	1168#	522#
Silage		.9 T	.6 T	1.2 T
Roughage		.3 T	.4 T	.2 T
Milk products		2#	3#	--
Feed costs per cwt.				
Corn		$ 9.65	$ 11.55	$ 7.76
Grain		.58	.61	.56
Commercial feed		3.50	2.65	4.34
Total concentrates		$ 13.73	$ 14.81	$ 12.66
Silage		5.65	2.52	8.78
Roughage		3.89	3.15	4.62
Pasture		.45	.60	.31
Milk products		.08	.15	.--
Total feed cost		$ 23.80	$ 21.23	$ 26.37
On basis of total enterprise				
Increase in value per enterprise		$6219.86	$5866.94	$6572.77
Feed cost per enterprise		5535.37	4147.96	6922.77
Return over feed cost per enterprise		$ 684.49	$1718.98	$-350.00
Number of animal units		61.1	37.5	84.7
Number of work units		59.7	49.6	69.7
Return over feed per work unit		$ 14.83	$ 33.29	$ -3.63
Pounds of beef produced		23868#	19877#	27860#
Cost per cwt.		$ 21.59	$ 22.16	$ 21.22
Selling price per cwt.		$ 23.06	$ 24.02	$ 22.10

Feed Costs and Returns on Sheep

Compare to Form 6 Analysis of Your Farm	Your Farm	Average of 5 Farms
Number of animal units		13.
Increase in value of flock		$ 1600.01
Total feed cost		1297.32
Net return over feed cost		$ 302.69
Total return per dollar feed cost		$ 2.31
Number of work units		14.
Net return per work unit		$ 40.70
Feed consumed per enterprise		
Concentrates		13358#
Silage		30.2T
Roughage		26.7T
Feed costs per enterprise		
Concentrates		$ 309.65
Silage		237.12
Roughage		698.83
Pasture		45.00
Milk		6.72
Total		$ 1297.32
Feed consumed per ewe		
Concentrates		103#
Silage		.3T
Roughage		.3T
Feed costs per ewe		
Concentrates		$ 2.26
Silage		2.14
Roughage		5.41
Pasture		.40
Milk		.25
Total		$ 10.46

Note: Animal unit = 7 sheep or 14 lambs

Feeder Costs and Returns on Producing Feeder Pigs
Farmers grouped on return per dollar feed cost

Items of Comparison Compare to Form 5F Analysis of Your Farm	Your Farm	Average of 52 Farms	Average of High 20 %	Average of Low 20 %
Number of litters per farm		25.	17.	24.6
Number of pigs born per litter		9.2	9.9	7.9
Number of pigs weaned per litter		7.3	8.	5.5
Percent death loss on pigs		23 %	18.9%	30.4%
Number litter farrowed per sow		1.6	1.7	1.7
Pounds of pork produced				
from sows		2382#	1536#	2709#
from pigs		7476#	5124#	5525#
Total pounds of pork produced		9858#	6660#	8234#
Number of feeder pigs sold		161	104	119
Average weight of feeders sold		40#	42#	44#
Price received per feeder pig		$ 17.19	$ 17.83	$ 15.66
Return per dollar feed cost		$ 2.23	$ 3.51	$ 1.33
Total returns per litter		$ 146.63	$ 147.65	$ 96.35
Total feed cost per litter		71.98	46.53	71.99
Return over feed cost per litter		$ 74.65	$ 101.12	$ 24.36
Total return per weaned pig		$ 19.90	$ 18.30	$ 17.55
Total feed cost per weaned pig		10.06	5.90	13.50
Return over feed cost per weaned pig		$ 9.84	$ 12.40	$ 4.05
Sow + pig feed consumed per litter		2848#	1732#	3247#
Sow + pig feed consumed per pig		370#	203#	584#
Pig feed eaten per weaned pig		41#	32#	53#
Number of work units per farm		54.6	37.8	52.6
Return over feed cost per work unit		$ 33.38	$ 47.48	$ 11.08
Animal units per enterprise		22.7	15.7	13.3

Feed Cost and Return on Market Hogs
Farmers grouped on return over feed cost per cwt.

Items of Comparison Compare to Form 5 M Analysis of Your Farm	Your Farm	Average of 50 Farms	Average of High 20%	Average of Low 20%
Total pounds of pork produced		32994#	18850#	34300#
Total value of pork produced		$ 6612.78	$ 5001.31	$ 5405.26
Total feed cost of production		4253.78	2121.83	4797.37
Return over feed per enterprise		$ 2359.00	$ 2879.48	$ 607.89
Return per dollar feed cost		$ 1.73	$ 2.35	$ .98
Total return per cwt. of pork		$ 20.73	$ 26.28	$ 16.01
Total feed cost per cwt. of pork		13.41	11.29	18.23
Return over feed per cwt. of pork		$ 7.32	$ 14.99	$ - 2.22
Feed consumed per cwt. of pork:				
Corn		299#	277#	467#
Grain		81.7	94.	72.
Commercial feed		113.3	75.	102.
Sub total		494.0	446.	641.
Skim milk		--	--	--
Roughage		2.9	5.	--
Total pounds		496.9 #	451. #	641. #
Feed costs per cwt. of pork:				
Corn		$ 6.34	$ 5.60	$ 10.73
Grain		1.52	2.00	1.81
Commercial feed		5.43	3.40	5.68
Pasture, skim milk, roughage, silage		.12	.29	.01
Total cost		$ 13.41	$ 11.29	$ 18.23
Total number of work units		81.3	62.3	75.8
Return above feed per work unit		$ 33.88	$ 57.30	$ - 12.05
Number of farms that farrowed sows		41	9	6
Number of sows farrowed per farm		14.4	9.4	7.9
Number of litters farrowed per sow		1.4	1.3	1.2
Number of pigs farrowed per litter		8.8	8.6	8.1
Number of pigs weaned per litter		7.0	7.1	5.7
Percent death loss on pigs		21.0 %	18.6 %	28.3 %
Number farmers buying feeders		12	1	5
Total weight of feeders bought		13675 #	8520 #	254 #
Average cost per cwt. of feeders		$ 42.89	$ 51.61	$ 46.88
Average weight of market hogs		224#	180 #	227#
Average price received per cwt.		$ 23.17	$ 26.61	$ 21.69
Average number of animal units		31.4	20.8	31.0

Statement of Farm Assets, Liabilities and Net Worth
Farmers grouped on basis of operator labor earnings

Compare to Form 3 Analysis of Your Farm	Your Farm	Average of All Farms	Average of High 20 %	Average of Low 20 %
End inventory values:				
Land	______	$ 12072.56	$ 14178.64	$ 11502.21
Equipment and buildings	______	16104.89	23521.68	11745.16
Livestock	______	10389.07	14135.61	8394.51
Crop, seed and feed	______	5312.99	8969.27	3109.63
Total farm capital	______	$ 43879.51	$ 60805.20	$ 34751.51
Farm house	______	$ 4529.30	$ 7518.32	$ 3415.69
Non-farm assets	______	4243.96	5329.51	4759.43
Total assets	______	$ 53785.37	$ 82730.32	$ 44378.92
Liabilities	______	16761.42	25521.27	15972.45
Net worth	______	$ 37023.95	$ 57209.05	$ 28406.47
Increase in net worth	______	$ 4625.00	$ 9738.56	$ 1440.99
Number of farms reporting		98	18	14

Prices Used In The 1966 Analysis

Prices used in 1966 were based on market sources of information. Inventory values were based on the market prices per unit of product. Farm-raised feed that was fed to livestock was charged to cattle on the basis of market value of the crop fed. Pasture costs seem to vary the most and are subjected to some personal judgement. Purchased feeds were charged at actual cost.

The following prices were used:

Corn	$ 1.25	Alfalfa hay good	$ 22.00
Soybeans	2.75	Alfalfa brome	20.00
Oats	.70	Wild hay	6.00
Barley	1.05	Other legume hay	15.00
Rye	1.00		
Flax	3.00	Corn silage	8.00
Wheat	1.75	Alfalfa silage	10.00

Distribution of Work Output and Livestock Production
Farms grouped on basis of operator labor earnings

Items of Comparison Compare to Form 8 Analysis of Your Farm	Your Farm	Average of All Farms	Average of High 20 %	Average of Low 20 %
Distribution of work:				
Dairy cows		262.3	330.	202.5
Other dairy cattle		55.5	74.2	36.7
Beef		3.5	6.1	6.9
Feeders		3.6	7.1	5.1
Hogs		30.5	39.	28.1
Sheep		.4	.6	.5
Poultry		8.0	--	6.4
Total work units on stock		363.8	457.	286.2
Total work units on crops		96.6	155.	71.1
Total work units per farm		460.4	612.	357.3
Distribution of animal units				
Dairy cows		26.2	33.	20.2
Other dairy cattle		15.9	21.2	10.5
Beef		1.2	1.8	2.3
Feeders		3.7	5.9	5.2
Hogs		12.0	16.3	13.4
Sheep		.3	.6	.4
Poultry		.8	--	.6
Total animal units per farm		60.1	78.8	52.6
Total tillable acres per farm		165.2	271.2	120.
Number of animal units per tillable acre		.41	.36	.45
Average number of workers		1.3	1.6	1.2
Work units per worker		364.7	397.	307.9

Number of Work Units for Classes of Livestock and Acres of Crops

Livestock	No. of Work Units	
Dairy cattle	10.	Per cow
Other dairy stock	3.5	Per a.u.
Beef breeding herd	3.5	Per a.u.
Feeder cattle	.25	Per cwt.
Sheep-flock	1.5	Per a.u.
Sheep-feeders	.3	Per cwt.
Hogs-market	.2	Per cwt.
Feeder pigs-large	2.	Per litter to 40#
Feeders-from 100#	1.	Per feeder
Hens	20.	Per 100 hens
Turkeys	.5	Per 100 lbs. or
Turkeys	40.	Per 100 hens

Crops	No. of Work Units	
Alfalfa	.6	Per A
Other hay	.4	Per A
Corn hogged	.4	Per A
Corn shredded	1.5	Per A
Corn silage	1.	Per A
Grass silage	.4	Per A
Corn husked	.7	Per A
Soybean-grain	.5	Per A
Small grain	.5	Per A

One Animal Unit Equals:

1	Cow - bull	2½	Sows
2	Other dairy	5	M. hogs
1 1/4	Beef cows	10	Pigs
3 1/3	Other beef cattle	7	Sheep
1	Feeder steer	14	Lambs
1100#	Turkeys	50	Hens

A work unit is based on 10 hours. An animal unit is based on the amount of T.D.N. consumed.

Agriculture Department
Area Vocational School
St. Cloud, Minnesota

Five Year Average Yields (Base Period 1961-65)
(For Use in Preparation of Farm Crops Analysis Form 8)

County Data	All Hay (2)	Corn Grain(3)	Corn Silage	Soy Beans	Oats	Oat Silage	Rye	Barley	Flax	All Wheat
Anoka	2.2	56	8.0	13	39.4	5.6	17.0	---	---	18
Benton	1.8	50	7.1	15	38.2	5.5	15.0	19.8	---	22
Chisago	1.9	59	8.4	13	51.0	7.3	17.0	28.0	---	22
Douglas	2.2	44	6.3	14	44.8	6.4	20.0	32.3	10	22
Hennepin	2.7	62	8.9	17	54.0	7.7	18.0	32.0	---	19
Isanti	2.2	58	8.3	14	48.0	6.9	18.0	30.0	---	23
Kanabec	2.0	52	7.4	13	44.8	6.4	14.0	29.0	---	22
Meeker	2.8	60	8.6	20	54.0	7.7	19.0	34.0	14	24
Milacs	2.9	47	6.7	12	44.0	6.3	14.0	26.0	12	24
Morrison	1.9	46	6.6	12	36.0	5.1	14.0	28.0	---	20
Ottertail	1.8	41	5.9	17	42.0	6.0	19.0	36.0	13	24
Sherburne	1.9	48	6.9	13	35.0	5.0	17.0	---	---	20
Stearns	2.1	46	6.6	14	45.0	6.4	16.0	30.0	10	21
Todd	2.0	44	6.3	14	44.0	6.3	18.0	28.8	11	19
Wadena	1.4	36	5.1	12	32.0	4.6	18.0	30.0	---	19
Wright	2.9	60	8.6	19	51.0	7.3	18.0	32.0	13	23
Minnesota	2.1	63	9.0	21	48.6	6.9	19.2	33.6	11.6	25

(1) Data Selected from "Minnesota Agricultural Statistics" Crop and Livestock Reporting Service, State Department of Agriculture.
(2) The more the alfalfa, the greater the average yield.
(3) Approximately 1/7 of the bushel corn yield equals tons of silage.
(4) Approximately 2000 lbs hay equals 6000 lbs silage equals 8000 lbs green chop.

Crop Classification System Used on Form 8

Class A (100%)	Class B (50%)	Class C (25%)	Class D (0%)
Alfalfa Hay	Corn Silage	Oat Silage	Small Grains
Alfalfa Silage	Sweet Corn	Non-legume hay	Wild Hay
Alfalfa Pasture	Soybeans	pasture	
Corn Grain		Silage	
Government Programs			

Work Units Per Crop Acre (U. of Minn.)

Alfalfa Silage	1.	Green Chop forage	.4
Grass Silage	1.	Small Grains	.5
Corn Silage	1.	Alfalfa Hay	.6
Corn husked	.7	Other (non-leg.) hay	.4
Corn hogged	.4	Fallon	.5
Corn Shredded	1.5	Other Legume hay	.6

Crop yield index calculation, crop selection index calculation and the use of such activity are described on page 24 of "The 1964 Farm Business Management Report" of St. Cloud as farmers use comparison data for their county of residence.

Comparison of Crop Grown, Acre Yields and Land Use
(Refer to County Five Year Average Yield- Page 22)

Items of Comparison Compare to Form 8 Analysis of Your Farm		Average of All Farms				Average of the High 20%				Average of the Low 20%			
Kinds of Crops Grown	Your Farm	No. of Growers	Yield Index	Acre Yield	Acres Grown	No. of Growers	Yield Index	Acre Yield	Acres Grown	No. of Growers	Yield Index	Acre Yield	Acres Grown
All crops grown			121.2%				131.0%				104.7%		
Corn silage		217	157.3	10.7	22.9	44	172.	12.4	28.1	43	134.1	8.7	19.2
Other silage		56	130.5	8.6	12.8	14	105.	6.6	17.6	13	126.3	8.5	10.4
Corn grain		218	146.4	69.0	33.7	45	157.	77.0	54.3	41	133.6	60.8	22.3
Soybeans		73	120.9	18.2	41.1	23	144.	21.9	80.0	14	93.7	13.5	15.0
Oats		187	93.9	40.6	29.1	33	101.	43.9	36.1	34	80.4	35.3	29.0
Wheat		12	91.7	20.5	22.2	7	100.	22.6	31.6	--	--	--	--
Rye		21	105.7	16.9	36.6	9	86.	13.9	52.3	2	111.0	18.5	13.5
Flax		3	94.3	26.9	37.1	2	82.	34.4	41.5	--	--	--	--
Alfalfa hay		188	117.9	2.5	38.6	37	126.	2.5	55.7	42	109.1	2.2	32.8
Other legume		49	110.9	2.1	34.4	9	133.	2.6	53.1	6	77.5	1.6	20.3
Grass hay		82	87.3	1.8	13.6	14	96.	1.9	13.3	19	73.1	1.5	16.9
Harvested acres					144.3				234.3				107.6
Tillable acres					165.2				271.2				120.0
Total acres in farm					263.7				394.7				229.2
Owned					207.6				275.5				199.8
Rented					56.1				119.2				29.4
Percent of land in high return crop					65.1%				68.7%				60.3%

Operation Costs for Farm Power, Buildings and Equipment Use
Farmers grouped on basis of operator labor earnings

Items of Comparison Compare to Form 2 Analysis of Your Farm	Your Farm	Average of ALL Farms	Average of High 20%	Average of Low 20%
Auto-farm share		$ 345.51	$ 380.29	$ 336.98
Truck		658.18	951.54	514.69
Tractor		1092.47	1455.25	950.99
Electricity		244.06	305.71	208.91
Total power cost		$ 2340.22	$ 3092.79	$ 2011.57
Crop machinery		$ 1050.85	$ 1300.69	$ 864.94
Livestock equipment		391.69	527.71	271.58
Building and fences		697.60	858.93	657.61
Total non-power cost		$ 2140.14	$ 2687.33	$ 1794.13
Net operation cost (Power, machinery, equipment and building costs)		$ 4480.36	$ 5780.12	$ 3805.70
Breakdown of power costs including depreciation				
Mechanization in relation to work units:				
Total power cost per work unit		$ 5.35	$ 5.14	$ 5.78
Crop machinery cost per work unit		2.30	1.86	2.53
Livestock equipment cost per W.U.		.80	.84	.67
Building cost per work unit		1.58	1.46	1.90
Total power, machinery, equipment and building cost per work unit		$ 10.03	$ 9.30	$ 10.88
Tractor cost per harvested acre		$ 8.24	$ 7.09	$ 9.25
Crop machinery cost per harv. acre		7.94	6.94	8.33
Total tractor and machinery cost per harvested acre		$ 16.18	$ 14.03	$ 17.58
End inventory value of power, machinery, equipment and buildings per farm worker		$ 12651.92	$ 15093.94	$10093.59

Measures of Farm Organization and Management Efficiency 1966
Farmers grouped on basis of operator labor earnings

Factors of Comparison Compare to Your Individual Analysis	Form	Your Farm	Average of All Farms	Average of High 20 %	Average of Low 20 %
1. Operator labor earnings	1	________	$ 5866.43	$11507.00	$ 1126.93
Return to capital and labor	1	________	$ 8117.13	$14460.46	$ 2987.75
2. Crop yield index based on 5 year county average yields	8	________	121.2%	131. %	104.7%
3. Crop selection index or percent of land in high return crops	8	________	65.1%	68.7%	60.8%
4. Return per dollar of feed cost on all productive livestock	3	________	$ 1.75	$ 1.86	$ 1.64
5. Productive animal units per 100 acres tillable land	8	________	41.	36.	45.
6. Total work units per farm (a work unit = a 10 hour day)	8	________	460.4	612.	357.3
7. Total work units per worker	8	________	364.7	397.	307.9
8. Power, machinery, equipment and building cost per work unit	2	________	$ 10.03	$ 9.30	$ 10.88

A Four Year Comparison of Farm Management Factors
Farmers grouped on basis of operator labor earnings

Group 1 Average all farmers	Average 1966	Average 1965	Average 1964	Average 1963
1. Operator labor earnings	$ 5866.43	$ 4382.76	$ 2468.26	$ 2813.49
Return to capital and labor	$ 8117.13	$ 6666.07	$ 4562.38	$ 4971.73
2. Crop yield index	121.2 %	117.2 %	80.8 %	123.5 %
3. Crop selection index	65.1 %	65. %	59.9 %	60.2 %
4. Return per dollar feed cost on all livestock	$ 1.75	$ 1.76	$ 1.58	$ 1.61
5. Productive a.u. per 100 acres	41.	71.	43.	41.
6. Total work units per farm	460.4	484.	486.6	447.8
7. Work units per worker	364.7	361.8	369.4	326.5
8. Net operating cost per w.u.	$ 10.03	$ 9.30	$ 8.28	$ 9.69
Group 2 Top 20%				
1. Operator labor earnings	$11507.00	$ 9398.56	$ 6833.92	$ 6415.34
Return to capital and labor	$14460.46	$12265.36	$ 9702.48	$ 9004.48
2. Crop yield index	131. %	127.3 %	108.9 %	130.1 %
3. Crop selection index	68.7 %	73.6 %	69.6 %	59.9 %
4. Return per dollar feed cost on all livestock	$ 1.86	$ 1.85	$ 1.75	$ 1.82
5. Productive a.u. per 100 acres	36.	46.2	37.9	37.9
6. Total work units per farm	612.	592.	598.33	587.9
7. Work units per worker	397.	402.	403.6	365.
8. Net operating cost per w.u.	$ 9.30	$ 9.13	$ 8.01	$ 9.03
Group 3 Low 20%				
1. Operator labor earnings	$ 1128.93	$ 58.68	$-1582.10	$ -471.56
Return to capital and labor	$ 2987.75	$ 2386.21	$ 544.38	$ 1855.18
2. Crop yield index	104.7 %	114.7 %	65.9 %	120.1 %
3. Crop selection index	60.8 %	65.2 %	66.1 %	54.2 %
4. Return per dollar feed cost on all livestock	$ 1.64	$ 1.56	$ 1.27	$ 1.33
5. Productive a.u. per 100 acres	45.	43.7	40.5	33.
6. Total work units per farm	357.3	414.6	473.8	350.8
7. Work units per worker	307.9	321.1	354.6	278.3
8. Net operating cost per w.u.	$ 10.88	$ 11.36	$ 10.07	$ 12.67

1966 Thermometer Chart of Management Measures

Using your figures from the analysis, locate your standing with respect to the various measures of farm organization and management efficiency. The averages for all farms included in this summary are located between the lines across the center of this page. Those with loss operations may not register efficiency. Farm management factors are clues to problems in operation and organization.

Labor Earnings	Crop Yield Index	Crop Choice Index	Return Per $100 Feed	Livestock Units Per 100 A.	Work Units Per Farm	Work Units Per Worker	Power, Machines, Eqpt., Bldgs., Expense Per Work Unit
20400	180		230	53	1170	605	1.00
19200	175	100	225	52	1110	585	1.75
18000	170	98	220	51	1050	565	2.50
16800	165	95	215	50	990	545	3.25
15600	160	92	210	49	930	525	4.00
14400	155	89	205	48	870	505	4.75
13200	150	86	200	47	810	485	5.50
12000	145	83	195	46	750	465	6.25
10800	140	80	190	45	690	445	7.00
9600	135	77	185	44	630	425	7.75
8400	130	74	180	43	570	405	8.50
7200	125	71	175	42	510	385	9.25
6000	120	68	170	41	450	365	10.00
4800	115	65	165	40	390	345	10.75
3600	110	62	160	39	330	305	11.50
2400	105	59	155	38	270	285	12.25
1200	100	56	150	37	210	265	13.00
0	95	53	145	36	150	245	13.75
-1200	90	50	140	35	90	225	14.50
-2400	85	47	135	34	30	205	15.25
-3600	80	44	130	33			16.00

Comparison of Farm Management Factors on the 24 Highest of the 46 Farms in the High Earning Group

FORM	1	1	1	8	8	3	8	8	8	2 3	3	3
Code No.	Operator Labor Earnings	Return to Capital and Labor	Cash Purchases Per Cash Sales	Crop Yield Index	Crop Selection Index	Return Per $ Feed Cost on All Stock	A. Units Per 100 Acres	Total W.U. Per Farm	Work Units Per Worker	Power, Eqpt. Bldg. Cost Per Work Unit	Net Return over feed Cost on Stock	Crop Seed Feed Increase
224	$20107.68	$28162.43	$ .75	154.7%	74.4%	$ 2.14	11.7%	900.6	391.6	$16.14	$16645.14	$41095.00
69	19851.22	25049.96	.85	115.6	67.2	1.24	11.0	799.4	319.8	13.73	4301.84	32517.23
44	16470.26	20290.24	.68	148.2	66.8	2.03	52.0	1016.2	380.6	8.96	22270.46	10347.24
202	16191.79	19486.17	.68	115.4	78.3	2.62	23.9	631.5	421.0	11.79	14938.95	16172.82
166	16083.12	19389.69	.45	136.1	59.2	1.30	21.4	733.8	209.7	6.23	4727.52	19892.42
206	14835.55	16944.45	.66	152.3	66.3	2.07	32.5	448.1	327.2	9.96	9019.47	14245.40
161	13541.26	18360.74	.77	108.3	46.8	1.64	36.0	978.8	489.4	9.70	$10260.30	18719.28
43	13444.52	16439.10	.57	109.0	69.7	2.14	21.0	645.9	430.6	8.47	12149.28	12432.70
9	13170.30	15981.72	.77	171.8	67.4	1.50	41.3	601.0	601.0	5.61	7887.96	13406.26
216	12502.23	15276.69	.48	120.9	69.4	2.14	18.1	433.3	361.1	10.67	8840.71	12530.83
118	12465.83	13783.76	.61	90.2	81.8	2.26	22.0	518.6	518.6	7.72	9835.01	7299.99
50	12084.91	14767.75	.73	134.5	75.2	1.63	48.0	526.5	351.0	9.53	8640.13	12591.28
226	12060.28	15553.68	.60	151.7	56.9	2.18	23.4	552.2	424.8	7.77	$10100.63	11608.33
20	12051.30	15720.47	1.08	167.1	69.4	1.38	28.5	808.0	646.0	8.43	7306.00	18587.59
41	12004.86	14779.34	.80	114.5	56.3	2.01	12.0	541.3	433.4	11.02	6243.35	15478.99
213	11945.00	16272.19	1.46	99.0	37.3	1.37	14.0	434.7	271.7	- 13.79	1326.79	12600.13
29	11593.94	13667.14	1.26	132.9	79.8	1.79	20.3	342.6	137.0	10.55	4757.12	13359.60
218	11492.86	15133.13	.60	135.0	74.2	2.24	57.0	569.8	379.9	13.99	18090.51	8472.90
18	10968.50	13121.17	.62	73.2	77.8	2.01	155.6	448.8	299.0	8.34	$14927.92	2739.32
3	10940.50	13470.52	.51	152.3	80.2	1.48	41.5	741.8	370.9	7.06	8196.27	16038.06
46	10931.49	12687.95	1.80	124.5	55.9	1.97	34.0	502.3	334.8	8.60	9153.11	9463.36
110	10912.34	13231.64	.66	90.7	70.4	1.30	30.6	865.4	432.7	7.15	6401.54	17071.26
10	10844.72	14335.19	1.12	101.1	61.5	1.62	18.5	654.7	436.5	12.52	14515.74	11564.91
215	10334.36	13917.99	.80	132.3	70.4	2.44	28.9	577.5	444.2	13.61	13992.33	11029.85

Comparison of Farm Management Factors on 24 Lowest of 46 Farms in the Low Earning Group

FORM	1	1	1	8	8	3	8	8	8	2	3	3
Code No.	Operator Labor Earnings	Return to Capital and Labor	Cash Purchases Per Cash Sales	Crop Yield Index	Crop Selection Index	Return Per $ Feed Cost on ALL Stock	A. Units Per 100 Acres	Total W.U. Per Farm	Work Units Per Worker	Power, Eqpt. Bldg. Cost Per Work Unit	Net Return Over Feed on Stock	Crop Seed Feed Increase
107	$-9334.94	$-5830.68	$ 1.87	122.4%	50.0%	$ 1.02	165.0	458.5	458.5	$ 8.71	$ 440.82	$ -627.35
35	-2813.65	- 924.74	1.01	110.8	48.5	.54	38.7	201.7	201.7	13.13	- 2461.49	4939.50
192	-1567.06	359.99	.65	91.3	51.8	1.53	84.1	138.3	138.3	24.62	1773.40	2706.01
205	-1527.86	873.05	.61	101.0	67.8	1.80	24.0	380.6	292.8	12.64	4928.16	1822.61
175	- 998.84	1974.78	.76	114.0	57.7	1.34	44.0	515.0	245.0	11.50	3422.02	7986.01
53	- 735.29	1151.35	.96	131.2	56.4	1.23	136.0	424.6	339.6	13.92	4817.19	4660.27
144	- 217.40	1429.01	1.11	102.6	65.4	1.45	48.1	360.8	360.8	6.84	1624.95	2969.45
155	4.89	564.47	.86	67.8	25.5	1.43	22.1	243.9	243.9	15.08	1643.13	3104.15
153	283.68	1147.36	1,25	139.6	87.8	1.76	41.6	204.2	204.2	14.61	1490.88	2696.40
156	310.51	1986.26	1.33	121.8	66.0	1.54	49.1	334.5	334.5	7.90	2131.17	3015.00
149	342.05	1056.58	1.42	30.5	27.6	1.87	63.9	208.1	208.1	7.37	2120.46	1024.86
105	576.85	2299.20	.60	124.0	81.9	1.39	26.0	286.5	382.0	14.39	2219.14	3997.25
209	581.38	2340.61	.95	126.6	76.7	1.59	37.2	508.8	339.0	12.17	4872.96	6656.55
141	897.76	2294.48	.76	76.8	56.5	1.25	24.1	409.8	409.8	5.65	1646.39	4052.95
34	1101.01	3201.86	.32	68.4	61.7	1.66	17.3	337.7	337.7	11.83	3261.87	5012.62
64	1215.75	2396.32	.47	85.6	93.2	3.08	12.0	123.2	123.2	11.68	1259.34	3385.42
91	1230.58	3340.03	.59	73.7	66.2	1.34	43.7	334.7	257.5	8.67	1293.68	2302.84
198	1385.16	2795.76	.60	95.5	45.8	1.27	30.8	322.5	215.0	8.80	1390.62	5015.11
154	1393.55	2495.55	.59	55.0	74.0	1.80	33.4	262.8	262.8	6.60	2710.30	2197.29
140	1417.47	2116.07	1.82	132.2	65.4	1.94	29.7	185.0	185.0	12.96	3101.36	2620.86
139	1577.51	4158.55	.97	104.7	75.0	1.67	33.8	496.6	496.6	12.16	5921.81	5904.18
94	1657.25	4378.25	1.00	155.6	63.2	1.06	29.6	428.6	330.0	9.38	688.05	7786.10
71	1668.77	5951.77	.96	121.8	66.7	1.15	54.0	369.4	246.3	12.21	2829.78	8957.03
56	1735.59	3930.80	1.49	138.2	75.7	1.49	90.0	681.9	454.4	14.94	9720.97	8361.47

Summary of Household, Living, and Personal Expenses

Number of records	23
Food and meals bought	$ 979.54
Operation and supplies	199.05
Furnishings and equipment	334.33
Clothing and clothing materials	306.53
Personal care and spending	148.92
Education and recreation	162.70
Gifts and special events	138.20
Hospitalization, doctors, medicine	391.02
Contributions, church, welfare	186.75
Household electricity, telephone	131.35
House repair and upkeep	81.01
Value of food from the farm	448.52
Total household living costs	$ 3507.92
Taxes, income/other, social security	136.65
Insurance premiums	226.27
Personal share of car or truck	115.23
Total living and personal expenses	$ 3986.07

Farm Family Status on Adult Equivalent Basis

Class	Age	Factor	Adult Equivalent
Men	Over 18	1.0	1.0
Women	Over 18	.8	.8
Boys	13 - 18	.9	.9
Girls	13 - 18	.8	.8
Boys	7 - 12	.6	.8
Girls	7 - 12	.6	.6
Boys	1 - 7	.4	.4
Girls	1 - 7	.4	.6

Total adult equivalent at home 3.1

VT 002 646

Technical Illustration, Guide for Administrators, Instructors, and Students.

Peters, G.F.
California State Dept. of Education, Sacramento
Pub Date - 63
MF AVAILABLE IN VT-ERIC SET. 73p.

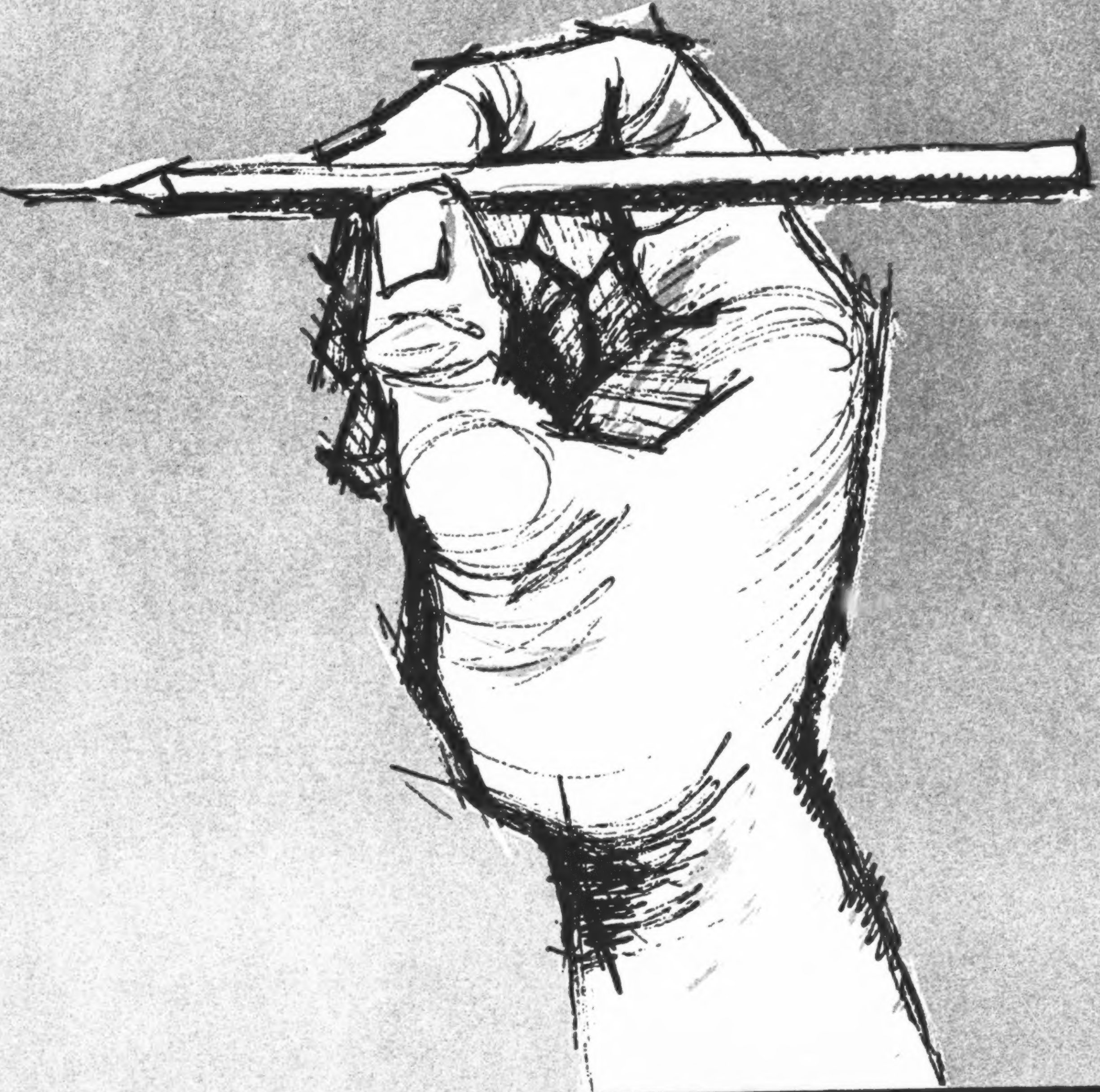
*ILLUSTRATORS, *ADMINISTRATOR GUIDES, *JUNIOR COLLEGES, *PROGRAM PLANNING, OCCUPATIONAL INFORMATION, ILLUSTRATIONS, CURRICULUM, TEAM TEACHING, EDUCATIONAL FACILITIES, EMPLOYMENT OPORTUNITIES,

The purpose of this guide is to provide persons involved with technical illustration programs information on training needs, curriculum requirements, and the scope of the field. It is based on a series of interviews, conducted in 1961, with major employers of technical illustrators in aircraft, missile, manufactured products, and research and development industries. Part One, Types of Illustrations, includes sample illustrations and descriptions for (1) maintenance handbooks, (2) flight handbooks, (3) schematic drawings, (4) wiring diagrams, (5) operational handbooks, (6) illustrated parts catalogs, (7) repair handbooks, (8) charts, (9) training aids, (10) production illustrations, (11) commercial illustrations, and (12) research and development illustrations. Part Two includes industry suggestions and curriculum recommendations for courses in mechanical technology, electronics symbology, freehand drawing, mechanical drawing, graphic reproduction, mathematics and technical science, general education, and technical illustration techniques. Part Three includes suggestions for team teaching, and Part Four gives specifications for facilities and equipment. Part Five, discusses guidance and job oportunities. Employment opportunities were greatest in aircraft and missile industries and will become important in commercial production as awareness of the potential of the technique spreads. The field was not crowded and was open to both men and women. Earnings varied greatly. The most valuable technical illustrator was identified as one who could do many types of illustrations well. Employment in this occupation totaled 2,150 in Los Angeles in 1960 and was projected to be 3,450 in 1965. (EM)

VT 002 646

TECHNICAL ILLUSTRATION

ED022065



GUIDE FOR ADMINISTRATORS INSTRUCTORS AND STUDENTS

CALIFORNIA STATE DEPARTMENT OF EDUCATION
MAX RAFFERTY
SUPERINTENDENT
OF PUBLIC INSTRUCTION
SACRAMENTO, 1963

VTC02646

CONTENTS

FOREWORD v

PREFACE vii

INTRODUCTION 1

PART ONE TYPES OF ILLUSTRATIONS 7

PART TWO INDUSTRY SUGGESTIONS AND CURRICULUM RECOMMENDATIONS 33

PART THREE TEAM TEACHING 53

PART FOUR CLASSROOMS AND FACILITIES 57

PART FIVE GUIDANCE AND JOB OPPORTUNITIES 67

INDEX Inside back cover

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

TECHNICAL ILLUSTRATION

GUIDE

TECHNICAL ILLUSTRATION

FOR ADMINISTRATORS
INSTRUCTORS AND
STUDENTS

FOREWORD

In order to help meet the needs of industry for technical illustrators, a number of California junior colleges have organized curriculums in technical illustration in recent years. To provide these schools with assistance in curriculum development and to aid others that propose to include technical illustration in their programs, this guide for technical illustration instructors was prepared.

The material contained in this guide is derived in part from a survey conducted among many major employers of technical illustrators in the state. Included also are recommendations to form the basis for the development of a sound curriculum based on the survey findings.

It is hoped that this guide will prove valuable to administrators and those charged with counseling and guidance responsibilities.

Max Rafferty

Superintendent of Public Instruction

PREFACE

Both scientific and technological developments in the past generation and particularly in the past decade have produced vast changes in industry. Accompanying these changes has been the requirement for skilled personnel to conceive, design, and operate the complex products stemming from this development. For example, technical illustration, once considered primarily a wartime measure to facilitate production, is regarded now as an important medium for the conveyance of engineering concepts into production realities.

The Bureau of Industrial Education, California State Department of Education, determined that a study was needed to ascertain the requirements for the formulation of curriculums in technical illustration at the junior college level. As a part of this study, a survey was conducted and a manuscript prepared by G. F. Peters, former Instructor of Technical Illustration at San Diego City College. This guide for instructors is a product of that study.

This guide is a volume in the Technical Education Curriculum Development Series being prepared under the direction of Russ Journigan, Supervisor of Technical Education. Funds appropriated under authority of Title VIII of the National Defense Education Act of 1958 aided in financing this project.

RICHARD M. CLOWES
Chief, Division of
Instruction

WESLEY P. SMITH
Director of Vocational
Education

ERNEST G. KRAMER
Chief, Bureau of
Industrial Education

INTRODUCTION

To help meet the growing needs of industry for technical illustrators, a number of California junior colleges in the past several years have added such instruction to their curriculums. Today, still other schools have indicated plans to offer a technical illustration program. In an effort to help these schools organize a curriculum that will truly meet the needs of business and industry, the Bureau of Industrial Education of the State Department of Education has conducted a survey among a number of employers of technical illustrators. The report contained in this book is the result.

The purpose of this publication is to provide a guide for persons whose activities are involved with technical illustration. It may be used to learn what employers of technical illustrators have found necessary and desirable in the education of young people who are entering the field, it may help the school administrator solve problems in establishing a new curriculum or improving an existing curriculum for training technical illustrators, and it may help the student to understand better what technical illustration is and what the requirements for success in the field are.

The study on which this publication is based consisted of a series of interviews with major employers of technical illustrators in the aircraft, missile, manufactured products, and research and development industries. These interviews were held in the three major metropolitan areas of California--San Francisco, Los Angeles, and San Diego--during the summer of 1961.

At one time in the planning of the survey, a mailed questionnaire was considered. However, an analysis of the material showed that few of the questions could be answered by a simple "yes" or "no." Furthermore, it was felt that a lack of response to mailed questionnaires might prolong the study or invalidate it completely.

For these reasons, the personal interview method was selected to gather material for the study. In the majority of cases, a tape recorder was used to preserve the contents of the interviews. In the ensuing section on "Industry Suggestions and Curriculum Recommendations," direct quotations from these interviews have been used.

The interviewers found a difference of opinion among employers regarding the duties of a technical illustrator. Therefore, the first section of this publication is devoted to explanations and illustrations of typical kinds of work in the field of technical illustration. The second section of the book presents segments of the interviews with representatives of industry, setting forth, often in their own words, what their experience has shown is required training for technical illustrators. Included in conjunction with these interview findings are suggestions for possible curriculums to meet these requirements.

At the conclusion, suggestions for classroom facilities, instructional staffs, guidance needs, and job opportunities are given.

In addition to offering their ideas for what should be included in the curriculum, those interviewed also made other important points that should be considered by the young person entering the field.

A high percentage of technical illustration is of a routine nature, the interviewees agreed, and only occasionally does a need for the purely creative arise. Technical illustration, in other words, is not the place for the highly temperamental artist who "loves art for art's sake alone."

They were also of the opinion that the field is not for the person who is content to end his educational career with the completion of his basic training. Time and again, the interviewees stressed that the field of technical illustration is part of a rapidly developing area and has room only for people who are willing to keep themselves continually informed of current trends and developments.

WHAT IS TECHNICAL ILLUSTRATION?

Technical illustration is a technique for producing an object view. The purpose of the illustration is primarily for communication between engineers who design and those who use or service products. The illustrations may appear in industrial catalogs, aircraft handbooks, training aids, engineering designs and tooling problems, assembly sheets, and promotional literature. They are generally drawn in orthographic or one of the axonometric or perspective methods and usually show detail parts, cutaway views, exploded assemblies, or installations.

Information for illustrations is taken from blueprints, technical sheets, engineering sketches, photographs, or the actual parts. The technical illustrator must be able to visualize this technical data in three dimensions, judge what the best methods of presentation may be, plan his layout, make an accurate pencil drawing, and finish this drawing according to the commercial or military specifications to which he is working. In addition to being technically and artistically correct, the drawing must also be done within acceptable time limits.

In most illustration departments, a new employee begins with the simple jobs and progresses to the more difficult ones as he gains confidence and experience. Some of the varied assignments that technical illustrators are expected to handle include the following:

1. PASTE-UP is the work of applying copy and call-outs (identification of individual items making up the whole) to the finished artwork, usually on overlay or transparent sheets. It is an exacting task requiring great accuracy. The new employee usually begins his career with this job.

2. INKING is another area of specialization required of the beginner. Many illustrators enjoy inking so much that they specialize in it. It is particularly good for the beginner because by inking over an experienced illustrator's drawing, he will unconsciously become aware of the many subtleties involved in good drawing and page layout.

3. LETTERING is required of all illustrators even though it may involve only the filling out of forms on which lettering is required. However, because of the constant need for charts of various kinds, some illustrators specialize in this phase of the work.

4. PHOTO RETOUCHING is used extensively in every illustration department. At the present, the demand for good photo retouchers exceeds the supply. The ability to do this work is, without a doubt, an important asset to any technical illustrator.

5. LAYOUT requires a knowledge of sources of technical information as well as an acquaintance with mechanical devices and systems. The ability to make good drawings and to lay them out effectively on the page is an essential skill of the technical illustrator. The levels of difficulty in laying out illustrations are as varied as the different types of layout. For example, making a layout of a mechanical device requires a different skill from that required for an electrical circuit. In almost every industry, the highest wage classifications in technical illustration require the ability to make good, accurate layouts.

WHY DO WE NEED TECHNICAL ILLUSTRATION?

Drawing is the universal language of the space age. The technical illustrator has the ability to describe the shape, dimensions, assembly, and installation of a technical object. By the use of an illustration that is usually superior to the spoken or written word, illustrators can convey the information necessary to give a clear and concise description of a complicated form. Pictorial language is becoming constantly more necessary as a result of the steadily increasing complexity of the machines of modern living. From the many new gadgets in the home to the extremely intricate equipment of the military, a picture is truly worth a thousand words.

INTRODUCTION

In 1939 it was noted by certain elements in major industry that a need existed for progression in the area of technical illustration. With the advent of World War II, the ensuing demand for production and trained production workers created a tremendous need for and served as a spur to the development of the technical illustration field and to the rise of the illustrator as a professional.

The use of pictorial drawings was one of the major answers to the problem of training workers. Assembly and fabrication operations were performed to a large extent by people who had no previous training or experience in technical areas. Clear, concise drawings showing the internal details of parts, assembly sequences, or operation and maintenance procedures were used to train these people. Pictures became substitutes for traditional blueprints, training periods were shortened, and the manpower needs of industry were filled.

As American industry grew, technical illustration became more and more essential in solving a greater number of problems in design, manufacturing, assembly, operation, and maintenance of technical equipment. Technical illustration has kept pace with the technological developments in American industry, especially during its phenomenal growth period during and following World War II. Techniques have become standardized, and commercial and military specifications have become reasonably well established. Technical illustration has evolved into a profession that makes an important contribution to industry and to the strength of the nation.

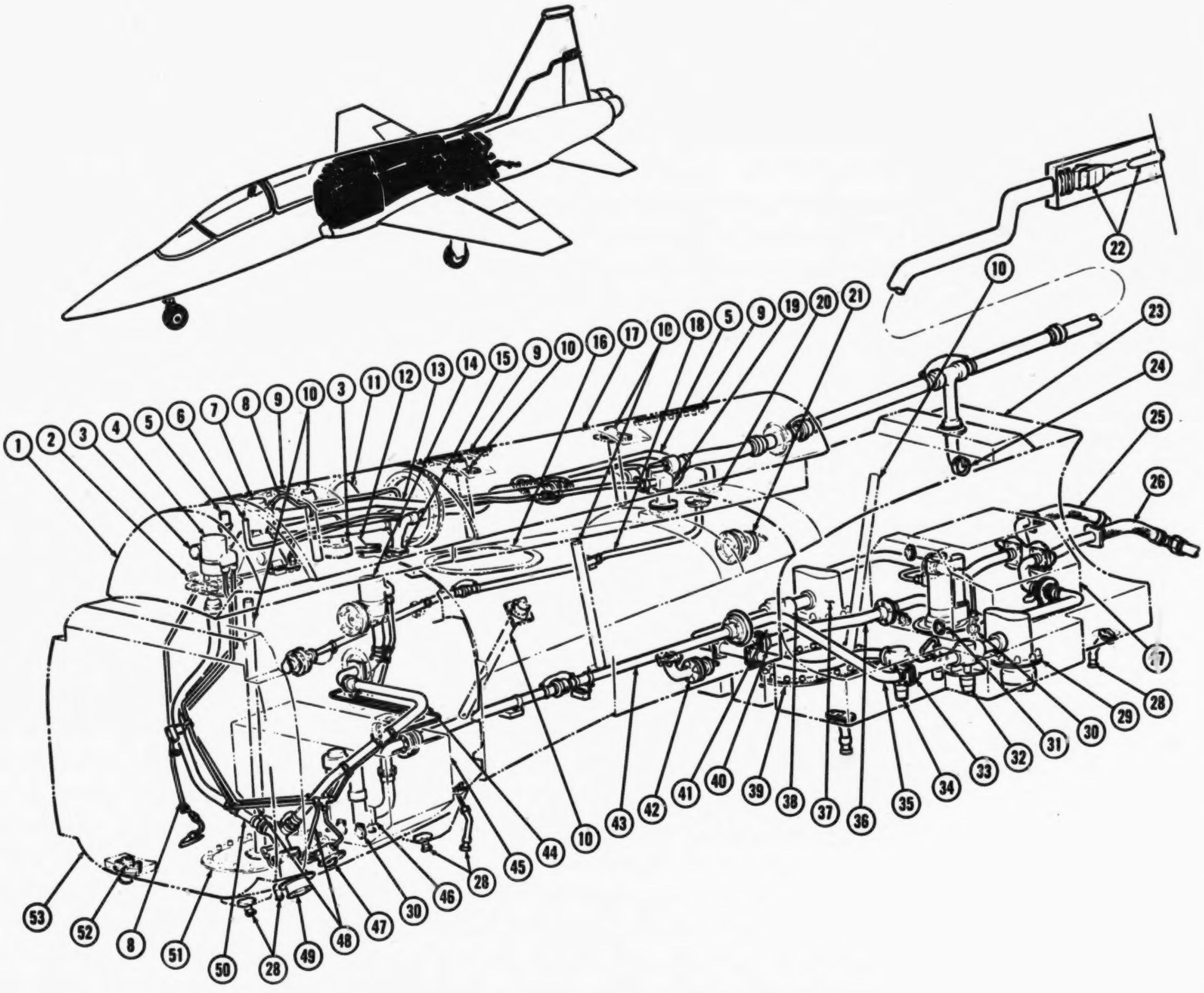
To exemplify the uses of technical illustration, the following drawings are given. Primarily they are award-winning drawings in the 1962 Technical Illustrators' Management Association exhibit at the California State Museum of Science and Industry in Los Angeles, and are used with permission. Purposes of the annual exhibit are to inform the public of the scope of technical illustration and the opportunities it affords as a profession, and to recognize outstanding ability in the field. It also gives local schools an opportunity to exhibit samples of student work.

PART ONE

TYPES OF ILLUSTRATIONS

- MAINTENANCE HANDBOOKS
- FLIGHT HANDBOOKS
- SCHEMATIC DRAWINGS
- WIRING DIAGRAMS
- OPERATIONAL HANDBOOKS
- ILLUSTRATED PARTS CATALOGS

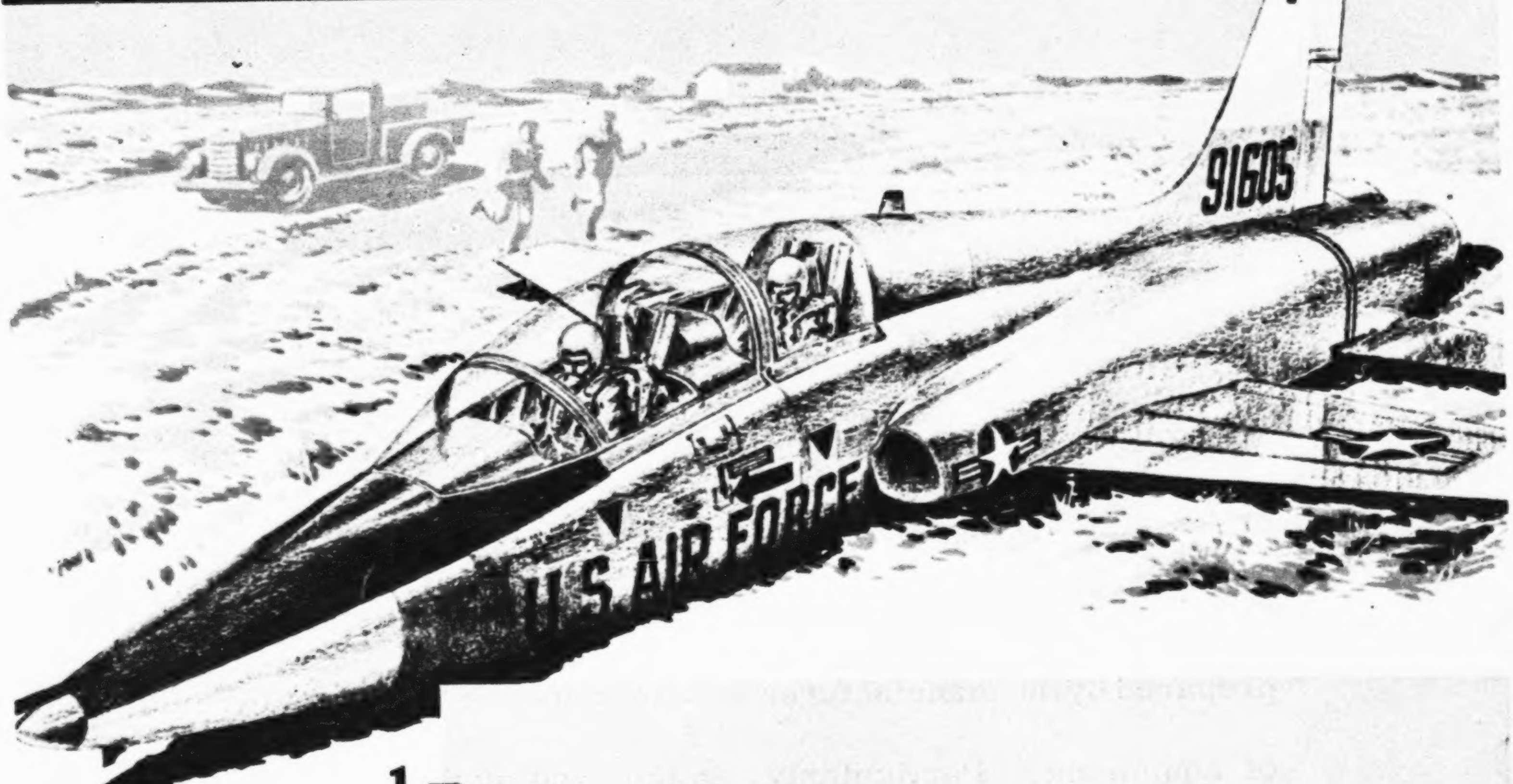
- REPAIR HANDBOOKS
- CHARTS
- TRAINING AIDS
- PRODUCTION ILLUSTRATIONS
- COMMERCIAL ILLUSTRATIONS
- RESEARCH AND DEVELOPMENT

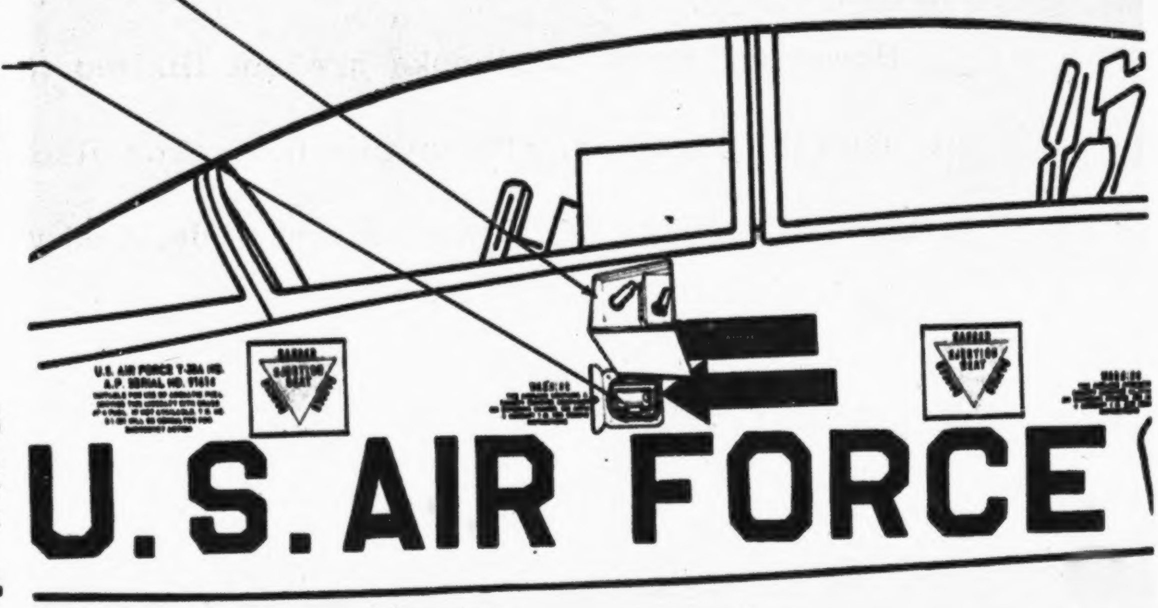


1 FORWARD DORSAL CELL
2 DORSAL CELL TO FORWARD CELL INTERCONNECT
3 DORSAL CELL TO FORWARD CELL STANDPIPE INTERCONNECT
4 FUEL LEVEL CONTROL VALVE—LEFT SYSTEM
5 CENTER AND AFT CELL VENT LINE
6 RIGHT SYSTEM FILL VENT LINE
7 VENT SYSTEM PRESSURE RELIEF VALVE
8 THERMAL BLEED LINE
9 DORSAL CELL ACCESS OPENING
10 FUEL QUANTITY PROBE
11 LEFT SYSTEM MANUAL FILL CAP INLET
12 RIGHT SYSTEM MANUAL FILL CAP INLET
13 MAIN VENT LINE
14 FUEL LEVEL CONTROL VALVE—RIGHT SYSTEM
15 CENTER CELL INTERCONNECT VENT TEE
16 CENTER CELL ACCESS DOOR
17 AFT DORSAL CELL
18 DORSAL CELL TO FORWARD CELL INTERCONNECT LINE
19 DIVE VENT MANIFOLD
20 AFT CELL VENT INTERCONNECT
21 UPPER CHECK VALVE CELL INTERCONNECT
22 FUEL VENT OUTLET AND RECOVERY MANIFOLD
23 AFT FUEL CELL
24 AFT CELL DIVE VENT VALVE
25 RIGHT ENGINE FUEL FEED LINE
26 LEFT ENGINE FUEL FEED LINE
27 INVERTED FLIGHT COMPARTMENT—RIGHT SYSTEM
28 CELL SERVICE DRAIN
29 LEFT SYSTEM FUEL STRAINER
30 FLAPPER CHECK VALVE
31 RIGHT SYSTEM BOOST PUMP
32 LEFT SYSTEM SHUTOFF VALVE
33 LEFT SYSTEM BOOST PUMP DISCHARGE CHECK VALVE
34 CROSSFEED SHUTOFF VALVE
35 LEFT SYSTEM FEED LINE
36 RIGHT SYSTEM FEED LINE
37 RIGHT SYSTEM FUEL STRAINER
38 RIGHT SYSTEM SHUTOFF VALVE
39 AFT CELL ACCESS DOOR
40 RIGHT SYSTEM BOOST PUMP DISCHARGE CHECK VALVE
41 RIGHT SYSTEM DRAIN VALVE
42 LOWER CHECK VALVE CELL INTERCONNECT
43 LEFT SYSTEM FUEL SUPPLY LINE
44 RIGHT SYSTEM SINGLE-POINT FUEL SUPPLY LINE
45 INVERTED FLIGHT COMPARTMENT—LEFT SYSTEM
46 LEFT SYSTEM BOOST PUMP
47 SINGLE-POINT PRECHECK SELECTOR VALVE
48 SINGLE-POINT PRECHECK VALVE FUEL LINES
49 SINGLE-POINT NOZZLE ADAPTER
50 LEFT SYSTEM SINGLE-POINT FUEL SUPPLY LINE
51 FORWARD CELL ACCESS DOOR
52 LEFT SYSTEM DRAIN VALVE
53 FORWARD FUEL CELL

MAINTENANCE HANDBOOKS contain drawings that illustrate such general maintenance procedures as replacement of components and assemblies, check-out, adjustment, and lubrication of equipment. They are prepared by the manufacturer for use by the purchaser in the maintenance of equipment. Particularly in the case of the military, maintenance personnel change so frequently that handbooks must be quite detailed. However, these handbooks are not limited to military use but may be used in connection with any mechanical or electrical device. In addition to the drawings, a certain amount of detailed written instruction is usually required.

EMERGENCY ENTRANCE





1

ACTUATE APPLICABLE EXTERNAL CANOPY LEVER LOCATED ON THE LEFT SIDE TO UNLOCK AND RAISE CANOPY.

2

IF STEP ONE FAILS, ACTUATE EXTERNAL CANOPY JETTISON "D" HANDLE LOCATED ON BOTH SIDES OF FUSELAGE.

WARNING

Actuating "D" handle will cause canopies to be blown from 6 to 8 feet into the air. Use caution to avoid falling canopies.

3

IF CANOPY CANNOT BE OPENED, BREAK CANOPY AT FORWARD EXTREMITY WITH AX OR HEAVY IMPLEMENT.

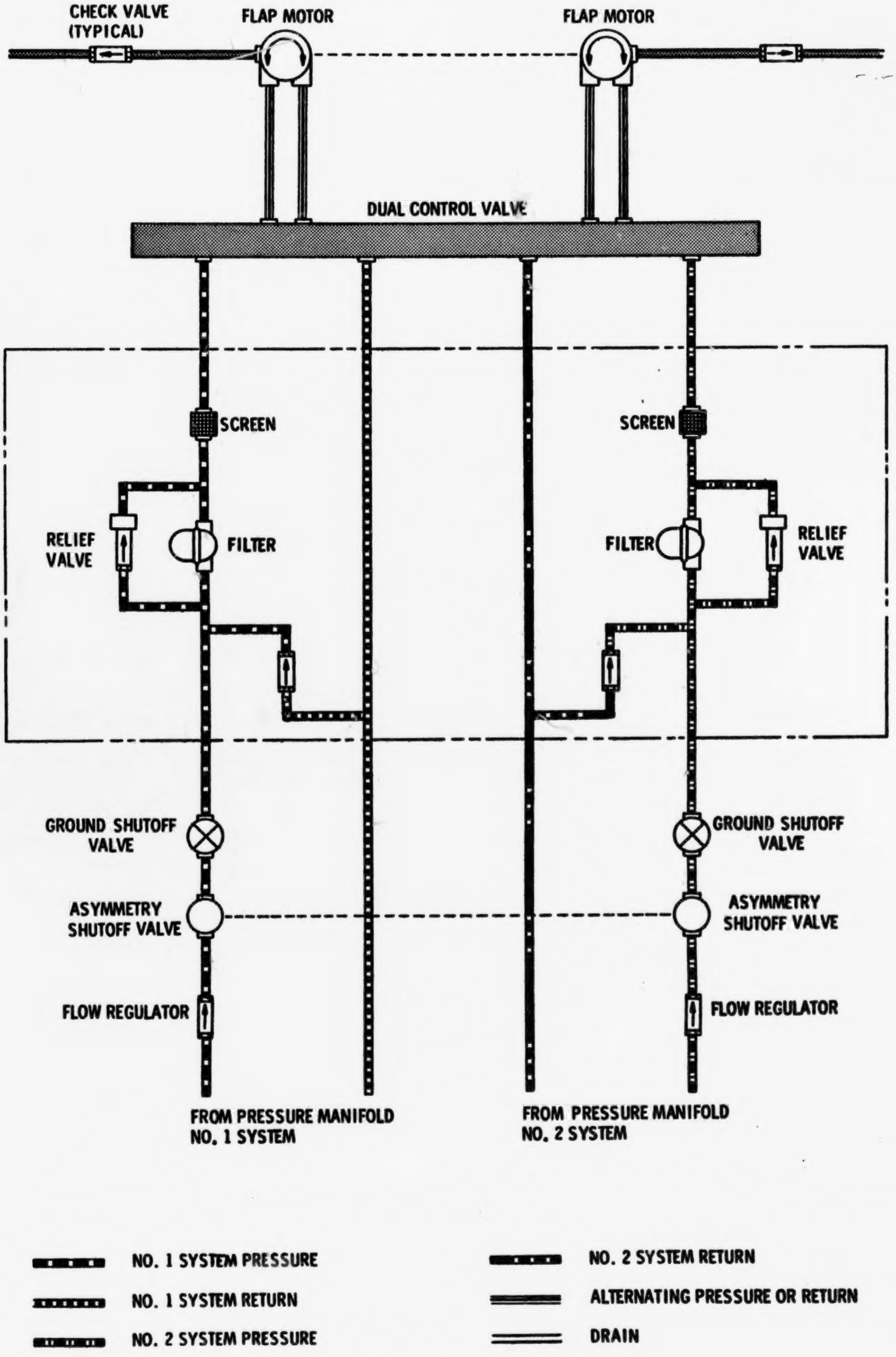
4

WHEN ACCESS TO COCKPIT IS GAINED, IF LEGBRACES HAVE NOT BEEN RAISED INSERT SAFETY PIN IN RIGHT EJECTION SEAT LEGBRACE TO PREVENT INADVERTENT EJECTION.

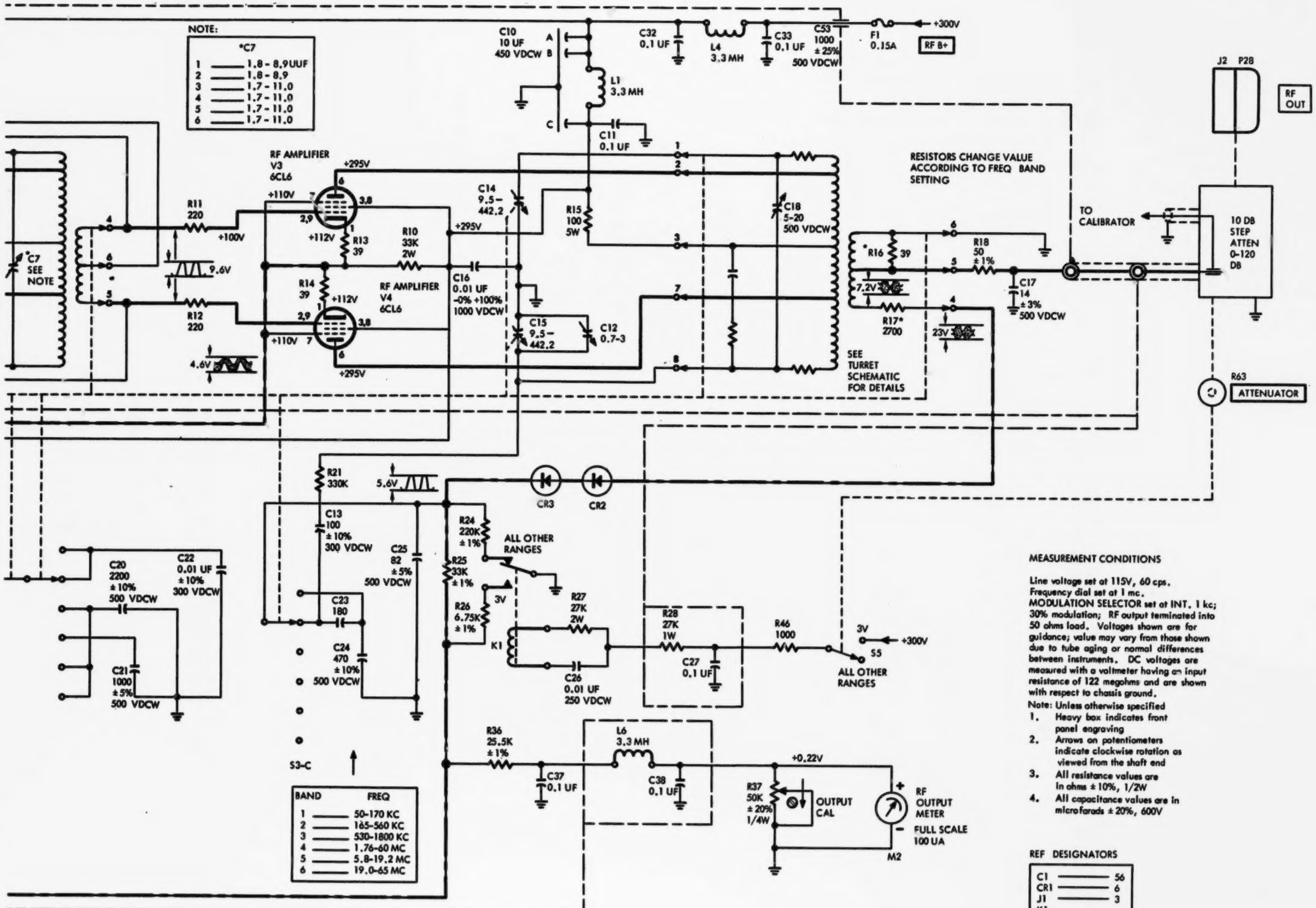
WARNING

If legbraces are raised, use extreme caution to avoid inadvertent ejection.

FLIGHT HANDBOOKS contain information necessary for safe and efficient operation of aircraft. The illustrations show accessories and equipment with instructions for their normal and emergency operating procedures. The written instructions accompanying the drawings also provide a general knowledge of the aircraft and its flight characteristics. Flight handbooks are prepared for the purchaser by the manufacturer for use by personnel who are directly concerned with operation of the aircraft. Although the name specifically limits these handbooks to aircraft, similar books are also supplied to purchasers of such equipment as automobiles and farm machinery.


CHECK VALVE
(TYPICAL)
FLAP MOTOR
FLAP MOTOR
DUAL CONTROL VALVE
SCREEN
SCREEN
RELIEF VALVE
FILTER
FILTER
RELIEF VALVE
GROUND SHUTOFF VALVE
GROUND SHUTOFF VALVE
ASYMMETRY SHUTOFF VALVE
ASYMMETRY SHUTOFF VALVE
FLOW REGULATOR
FLOW REGULATOR
FROM PRESSURE MANIFOLD NO. 1 SYSTEM
FROM PRESSURE MANIFOLD NO. 2 SYSTEM
NO. 1 SYSTEM PRESSURE
NO. 1 SYSTEM RETURN
NO. 2 SYSTEM PRESSURE
NO. 2 SYSTEM RETURN
ALTERNATING PRESSURE OR RETURN
DRAIN

SCHEMATIC DRAWINGS are diagrammatic and illustrate the function, path-of-flow, or essential details of internal and external component interconnections. For ease of illustration within specific space requirements, the drawings of individual pieces of equipment are often rearranged on the page. By and large, these drawings are prepared by the manufacturer for use by persons who are interested in the relationship of components within a given system. These drawings are utilized in the entire field of machinery and control systems. They are also used by research workers to illustrate for the layman the steps followed in a new development.


C10
10 UF
450 VDCW
A
B
C
L1
3.3 MH
C11
0.1 UF
C32
0.1 UF
L4
3.3 MH
C33
0.1 UF
C53
1000
± 25%
500 VDCW
F1
0.15A
+300V
RF B+
J2
P28
RF OUT
RF AMPLIFIER
V3
6CL6
RF AMPLIFIER
V4
6CL6
+295V
+110V
+112V
+100V
+295V
R11
220
R12
220
R13
39
R14
39
R10
33K
2W
R15
100
5W
C14
9.5 - 442.2
C15
9.5 - 442.2
C16
0.01 UF
-0% +100%
1000 VDCW
C12
0.7-3
C18
5-20
500 VDCW
9.6V
4.6V
C7
SEE
NOTE
RESISTORS CHANGE VALUE ACCORDING TO FREQ BAND SETTING
R16
39
R17*
2700
7.2V
23V
R18
50
± 1%
C17
14
± 3%
500 VDCW
SEE TURRET SCHEMATIC FOR DETAILS
TO CALIBRATOR
10 DB STEP ATTEN 0-120 DB
R63
ATTENUATOR
R21
330K
5.6V
CR3
CR2
C13
100
± 10%
300 VDCW
C25
82
± 5%
500 VDCW
C23
180
C24
470
± 10%
500 VDCW
S3-C
C20
2200
± 10%
500 VDCW
C22
0.01 UF
± 10%
300 VDCW
C21
1000
± 5%
500 VDCW
R24
220K
± 1%
R25
33K
± 1%
R26
6.75K
± 1%
ALL OTHER RANGES
3V
K1
R27
27K
2W
C26
0.01 UF
250 VDCW
R28
27K
1W
C27
0.1 UF
R46
1000
3V
+300V
S5
ALL OTHER RANGES
R36
25.5K
± 1%
C37
0.1 UF
L6
3.3 MH
C38
0.1 UF
+0.22V
R37
50K
± 20%
1/4W
OUTPUT CAL
RF OUTPUT METER
FULL SCALE 100 UA
M2

NOTE:

*C7	
1	1.8 - 8.9UUF
2	1.8 - 8.9
3	1.7 - 11.0
4	1.7 - 11.0
5	1.7 - 11.0
6	1.7 - 11.0

BAND	FREQ
1	50-170 KC
2	165-560 KC
3	530-1800 KC
4	1.76-60 MC
5	5.8-19.2 MC
6	19.0-65 MC

MEASUREMENT CONDITIONS

Line voltage set at 115V, 60 cps.
Frequency dial set at 1 mc.
MODULATION SELECTOR set at INT. 1 kc; 30% modulation; RF output terminated into 50 ohms load. Voltages shown are for guidance; value may vary from those shown due to tube aging or normal differences between instruments. DC voltages are measured with a voltmeter having an input resistance of 122 megohms and are shown with respect to chassis ground.

Note: Unless otherwise specified

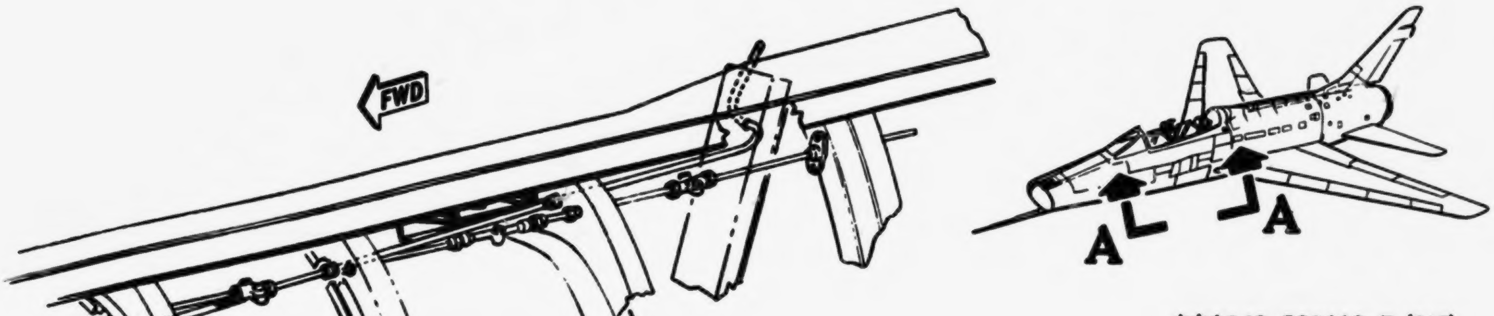
1. Heavy box indicates front panel engraving
2. Arrows on potentiometers indicate clockwise rotation as viewed from the shaft end
3. All resistance values are in ohms ± 10%, 1/2W
4. All capacitance values are in microfarads ± 20%, 600V

REF DESIGNATORS

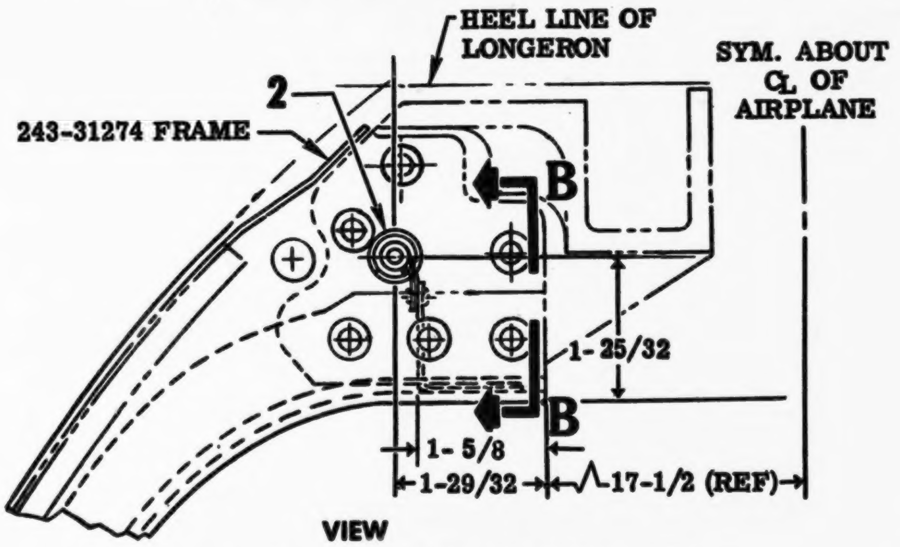
C1	56
CR1	6
J1	3
K1	
L1	5
M1	2
R1	71
RT1	
S1	7
T1	
V1	10
F1	

UNASSIGNED:
C21, 34, 35, 42
L2, 5
R70
S2, 4
DELETED:
C36, 39

WIRING DIAGRAMS have a more limited application than do some other forms of technical illustration; they are confined to the area of electrical connections and systems. Such diagrams are designed to show every detail of a circuit, including identification of all wires and their terminations and interconnections with associated equipment. These diagrams are taken from engineering specifications and are used for instructing repairmen and assemblers in trouble shooting and removing and installing components.


FWD
A
A
STA 162
STA 172
STA 183.25

VIEW **A-A**
LOOKING INBOARD - LEFT SIDE. (RIGHT SIDE OPPOSITE)


HEEL LINE OF LONGERON
SYM. ABOUT ℄ OF AIRPLANE
2
243-31274 FRAME
B
B
1-25/32
1-5/8
1-29/32
17-1/2 (REF)

VIEW
LOOKING FORWARD STA. 183.25 LEFT-HAND SHOWN (RIGHT-HAND OPPOSITE)

NOTE Figures 19 through 28 show sequencing system installation for F-100F airplanes. See figure 29 for schematic of seat sequencing system.

Warning

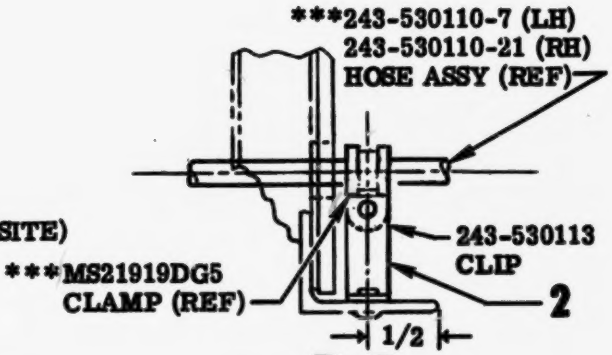
Only qualified personnel should be allowed to work in the cockpit area and on the ejection seat system.

1 Remove for access the AFT instrument panel and 243- 53169 cover assembly.

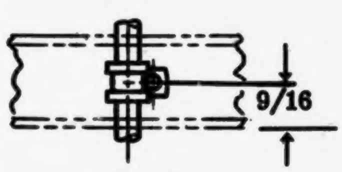
NOTE Panels and equipment may be temporarily removed if necessary for access.

2 Cut One 3/4 (0.750) inch diameter hole through 243-31274 frame web (Right and Left side).
Install Two 243-530113 clips
Four MS20470AD4-6 rivets

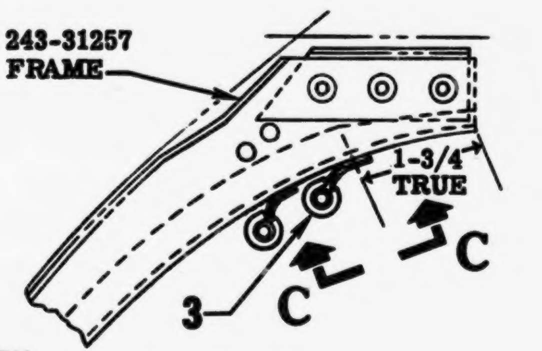
3 Drill One No. 10 (0.193-inch diameter) hole through 243-31272 frame web (Right and Left side) and One No. 10 hole through 243-31257 frame web-Left-side only.


***243-530110-7 (LH)
243-530110-21 (RH)
HOSE ASSY (REF)
243-530113
CLIP
***MS21919DG5
CLAMP (REF)
2
1/2

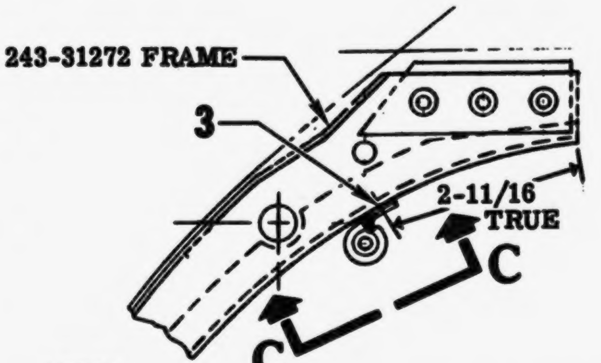
VIEW **B-B**



VIEW **C-C**


243-31257
FRAME
1-3/4
TRUE
C
C
3

VIEW
LOOKING FORWARD STA. 162 LEFT-HAND

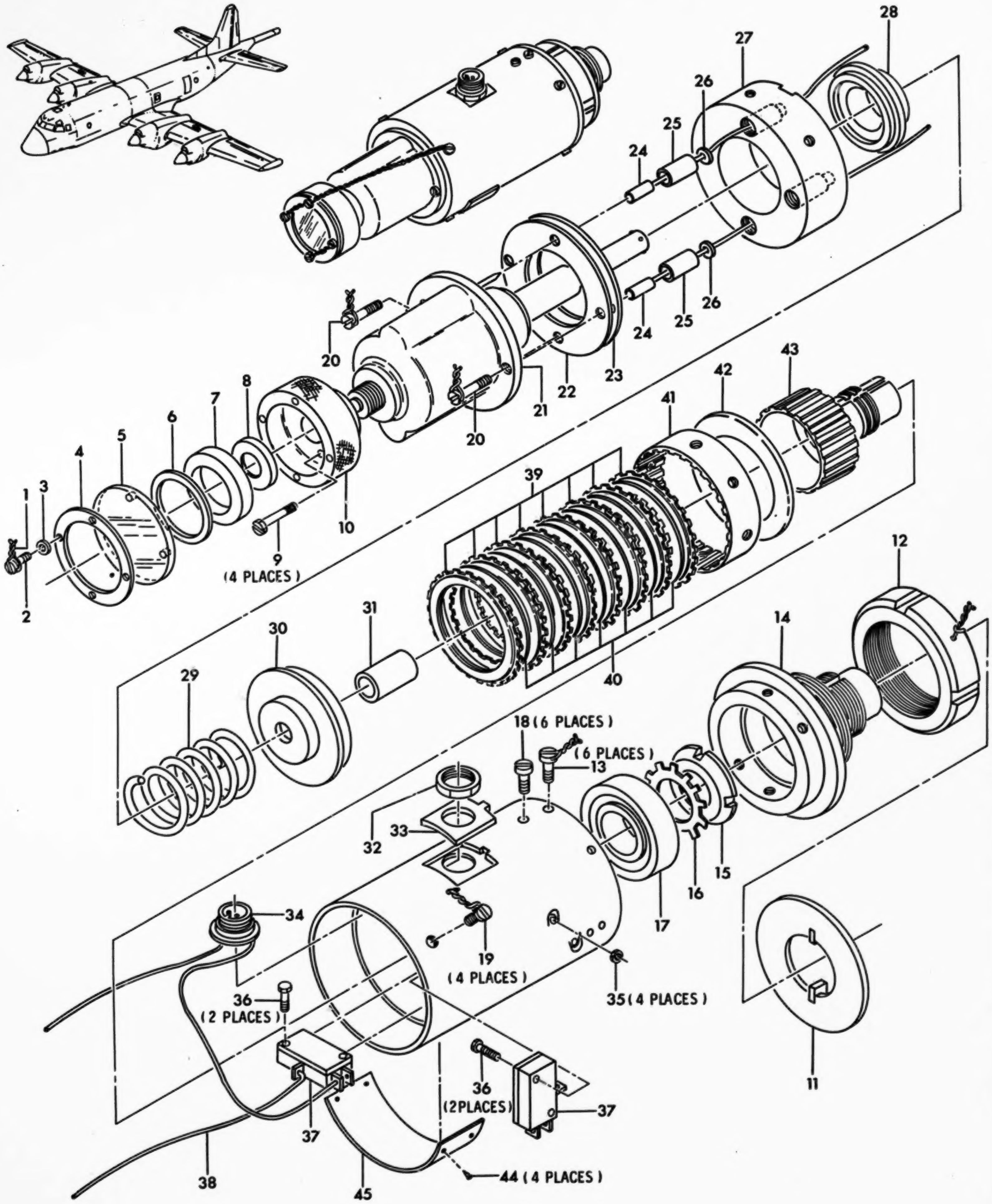

243-31272 FRAME
3
2-11/16
TRUE
C
C

VIEW
LOOKING FORWARD - STA. 172 LEFT-HAND SHOWN (RIGHT-HAND OPPOSITE)

*****NOTE** FOR INSTALLATION OF 243-530110-7 (LH), 243-530110-21 (RH) HOSE ASSEMBLIES AND MS21919DG5 CLAMPS AT STA. 162, 172, AND 183.25 - SEE FIGURE 25

OPERATIONAL HANDBOOKS, which include service bulletins, installation manuals, and operating manuals, are used primarily for field modifications. These handbooks have particular application for military aircraft where equipment is often returned to a base for modifications that incorporate new developments. Similar handbooks are sometimes supplied by manufacturers of commercial equipment to garagemen and servicemen. The basic purpose of operational handbooks is to inform consumers of correct operation and maintenance and to advise them of modifications that may be made.

ILLUSTRATED PARTS CATALOGS



1
2
3
4
5
6
7
8
9
(4 PLACES)
10
11
12
13
(6 PLACES)
14
15
16
17
18 (6 PLACES)
19
(4 PLACES)
20
20
21
22
23
24
24
25
25
26
26
27
28
29
30
31
32
33
34
35 (4 PLACES)
36
(2 PLACES)
36
(2PLACES)
37
37
38
39
40
41
42
43
44 (4 PLACES)
45

ILLUSTRATED PARTS CATALOGS are used by technicians to identify specific parts of a piece of equipment, usually for replacement. To do this, the parts of the total assembly shown in the catalog are "exploded" to make positive identification of each part possible. The parts are shown in the definite relationship in which they would be disassembled. As with many of the other applications for technical illustration, these drawings are not confined to the aircraft industry but are used extensively by manufacturers of pieces of any equipment that contain an assembly of parts.

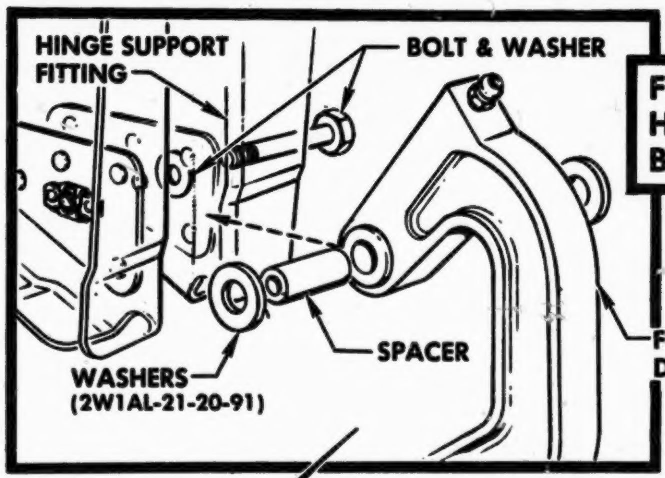
The following equipment is required for this procedure:

- Set of jacks
- Jacking and mooring kit (Federal Stock No. 1980-440-9284)
- Hydraulic test stand capable of delivering 8 gpm at 3000 psi
- 28-volt dc external electrical power

NOTE The following procedure is typical for either gear fairing door.

1 Position nose gear fairing door in wheel well area. Install forward hinge attach bolts as follows:

a. Insert spacer in forward door hinge.
b. Position two 2W1AL-21-20-91 washers between hinge and hinge support fitting (one washer on each side of forward door hinge).
c. Position 2W18-10M washer under head of attach bolt.
d. Insert bolt through hinge and hinge support fitting with bolthead facing aft.
e. Tighten hinge attach bolt.

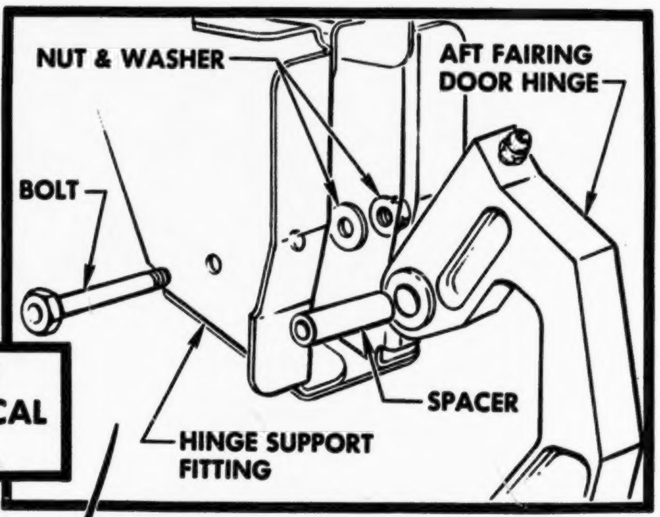

HINGE SUPPORT FITTING
BOLT & WASHER
WASHERS (2W1AL-21-20-91)
SPACER
FWD FAIRING DOOR HINGE

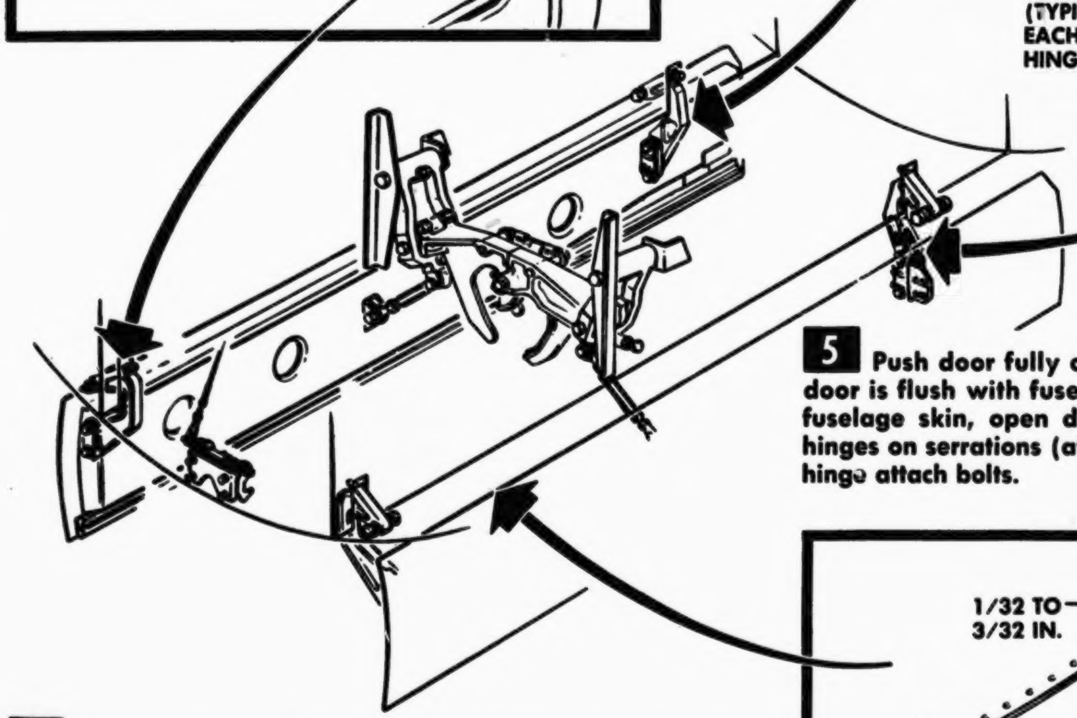
FWD AND AFT HINGES—TYPICAL BOTH DOORS

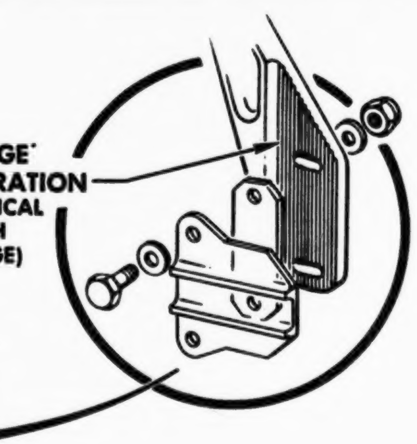
2 Install aft hinge attach bolt as follows:

a. Insert spacer in aft door hinge.
b. Insert bolt through hinge and hinge support fitting with bolthead facing forward.
c. Install 2W18-10M washer and nut on attach bolt. Tighten hinge attach bolt.

3 Do all steps in "General Procedure Before Landing Gear System Operation." Increase hydraulic pressure and retract nose gear. Release hydraulic pressure.

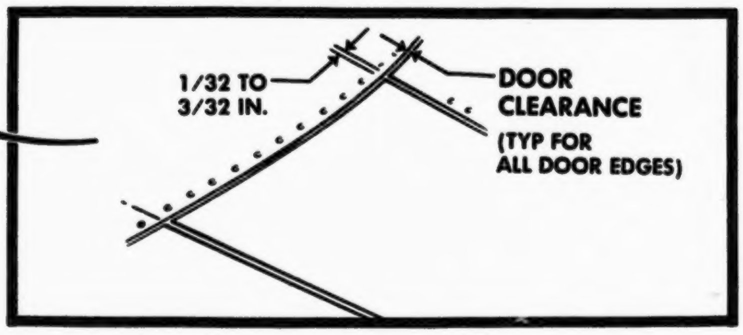

NUT & WASHER
AFT FAIRING DOOR HINGE
BOLT
SPACER
HINGE SUPPORT FITTING



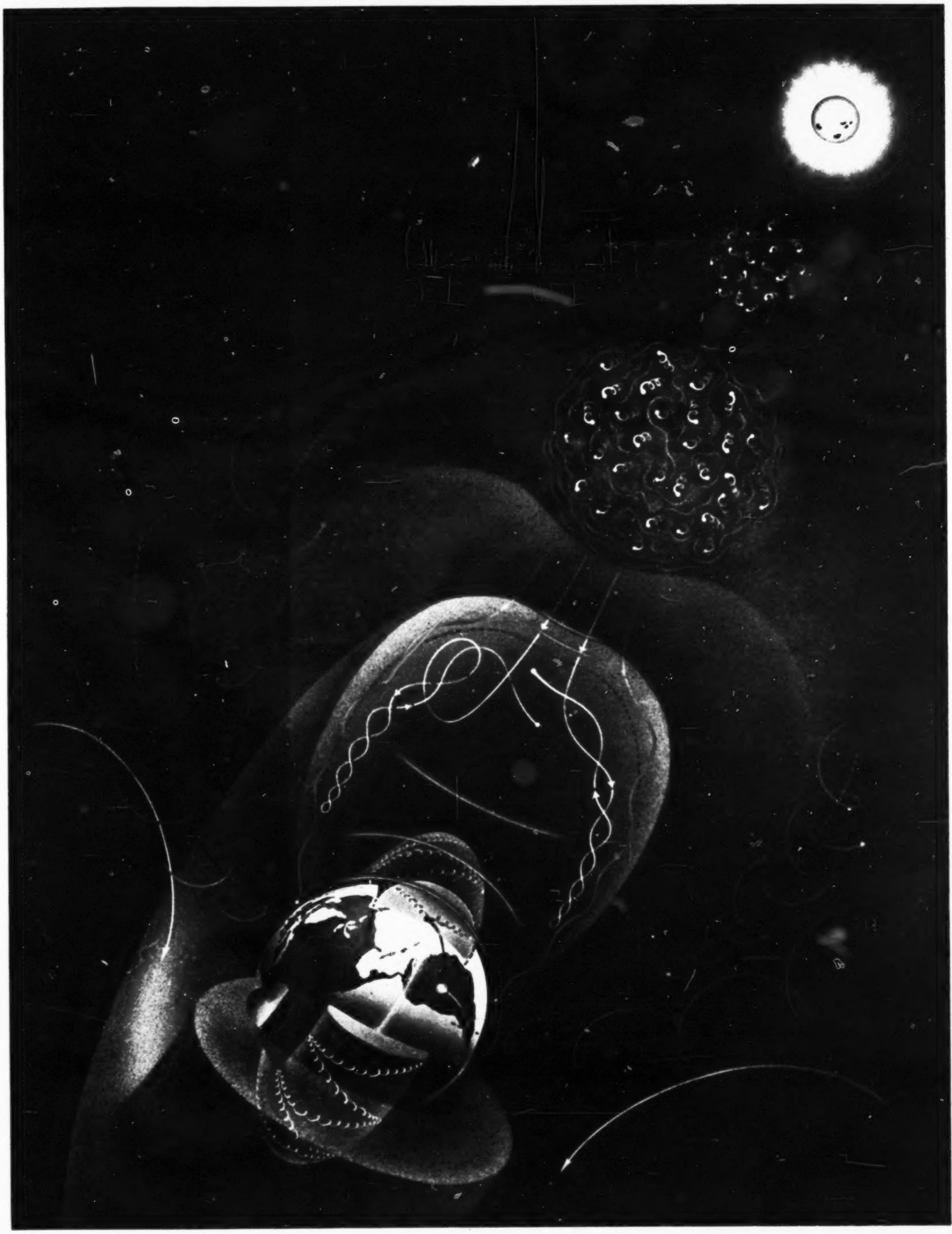

HINGE SERRATION (TYPICAL EACH HINGE)

4 Remove door uplock roller. Push fairing door closed. Hold door closed and mark edges of door where trim is needed to maintain 1/32- to 3-32-inch clearance around edge of door. Open door and trim door as required.

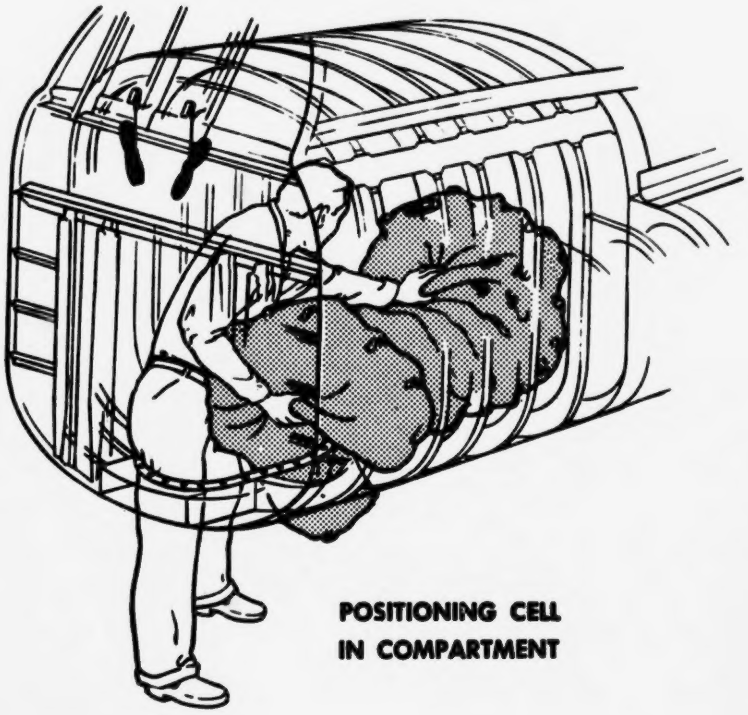
5 Push door fully closed. Check that outboard edge of door is flush with fuselage skin. If door does not fair with fuselage skin, open door and adjust forward and/or aft hinges on serrations (at hinge attach point to door). Tighten hinge attach bolts.


1/32 TO 3/32 IN.
DOOR CLEARANCE
(TYP FOR ALL DOOR EDGES)

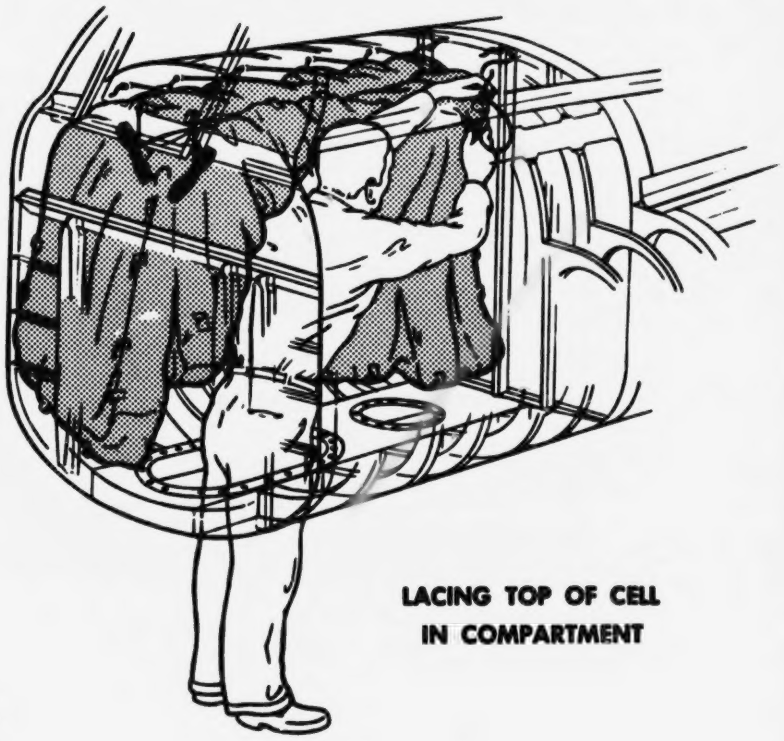
REPAIR HANDBOOKS contain familiar step-by-step illustrations. Both sequence and detailed call-outs are important in these handbooks. In some cases, in order to emphasize a step or to assure identification of a part, a section may be shown in magnification. These handbooks are prepared by the manufacturer for use by repairmen. In the case of aircraft equipment, the repair handbook is usually concerned with structural repairs. Handbooks for less complex equipment may be utilized by individuals who have purchased equipment for personal use and wish to make their own repairs.



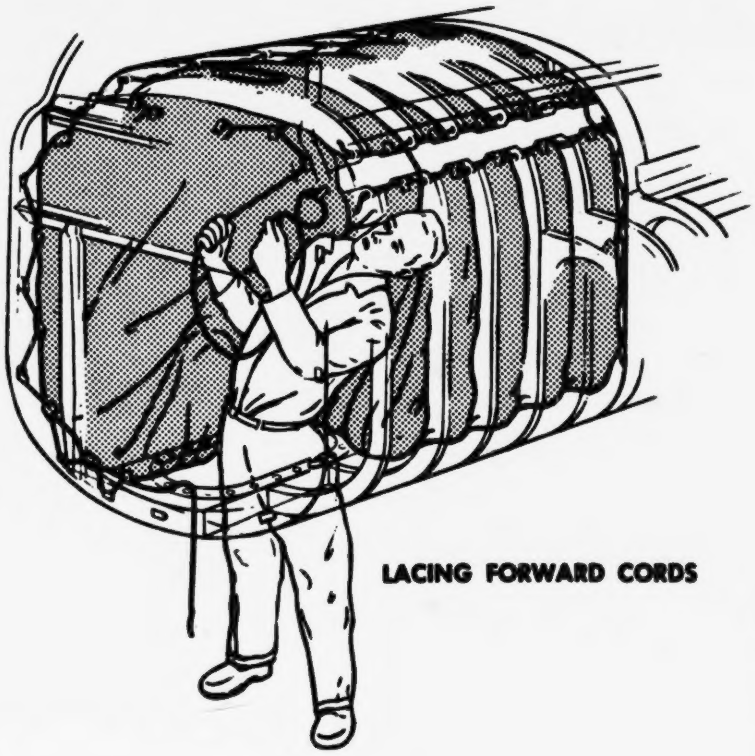
CHARTS are designed primarily to sell something--a piece of equipment, a part, or an idea. Therefore, charts must reflect the capability of and instill confidence in the organization they represent. Although the layout, lettering, and illustrations must show good artistic sense, these elements cannot be allowed to detract in any way from the primary purpose of the charts. These charts may be used to convey information to many groups, including service industries, manufacturers, and audiences ranging from the professional to the layman. The viewing audiences may vary considerably in size; therefore the charts must be made so that they can be easily read from any part of a large room.



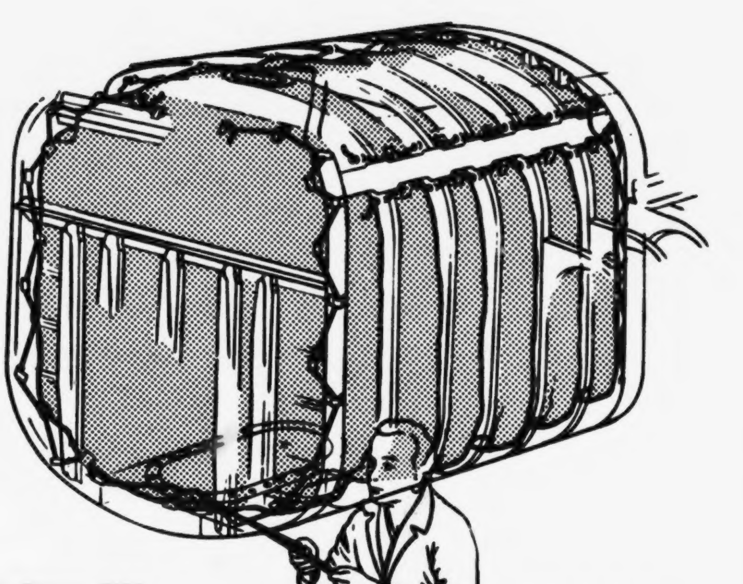
POSITIONING CELL
IN COMPARTMENT



LACING TOP OF CELL
IN COMPARTMENT

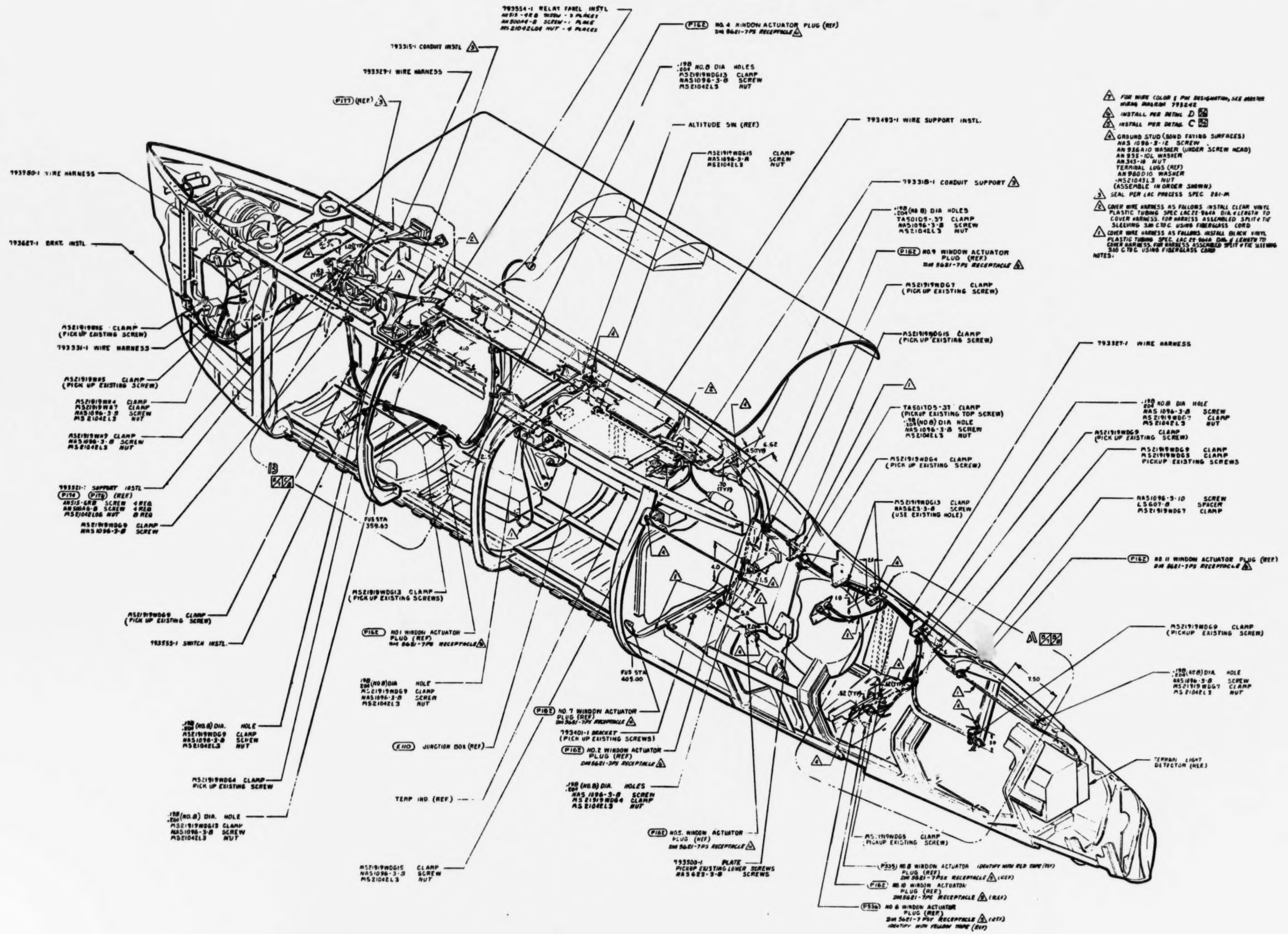


LACING FORWARD CORDS



WORK FINAL TIES
OUTSIDE OF COMPARTMENT

TRAINING AIDS are usually presented in the form of color transparencies, although they may be charts, animated structures, or models. Because many training programs are brief and concentrated, the illustrations used must communicate quickly, clearly, and memorably. Therefore, training aids must be appealing to the eye, interesting, and legible. Usually shown as part of a series, no one illustration is required to present the entire story. These aids are often prepared by an outside specialist under contract to a manufacturer who uses them for training such groups as employees, distributors, dealers, and users.


793554-1 RELAY PANEL INSTL
MS15-4R8 SCREW - 3 PLACES
AN500A4-8 SCREW - 1 PLACE
MS21042L06 NUT - 4 PLACES
793315-1 CONDUIT INSTL 3
793329-1 WIRE HARNESS
P177 (REF) 3
P162 NO.4 WINDOW ACTUATOR PLUG (REF)
DM 5621-7PS RECEPTACLE 6
.198/.204 NO.8 DIA HOLES
MS21919WDG13 CLAMP
NAS1096-3-8 SCREW
MS21042L3 NUT
ALTITUDE SW (REF)
MS21919WDG15 CLAMP
NAS1096-3-8 SCREW
MS21042L3 NUT
793493-1 WIRE SUPPORT INSTL.
793318-1 CONDUIT SUPPORT 3
.198/.204 (NO 8) DIA HOLES
TA501D5-.37 CLAMP
NAS1096-3-8 SCREW
MS21042L3 NUT
P162 NO.9 WINDOW ACTUATOR PLUG (REF.)
DM 5621-7PS RECEPTACLE 6
MS21919WDG7 CLAMP
(PICK UP EXISTING SCREW)
MS21919WDG15 CLAMP
(PICK UP EXISTING SCREW)
1
TA501D5-.37 CLAMP
(PICKUP EXISTING TOP SCREW)
.198/.204 (NO 8) DIA HOLE
NAS1096-3-8 SCREW
MS21042L3 NUT
MS21919WDG4 CLAMP
(PICK UP EXISTING SCREW)
MS21919WDG13 CLAMP
NAS623-3-8 SCREW
(USE EXISTING HOLE)
793327-1 WIRE HARNESS
.198/.204 NO 8 DIA HOLE
NAS 1096-3-8 SCREW
MS 21919WDG7 CLAMP
MS 21042L3 NUT
MS21919WDG9 CLAMP
(PICK UP EXISTING SCREW)
MS21919WDG9 CLAMP
MS21919WDG5 CLAMP
PICKUP EXISTING SCREWS
NAS1096-3-10 SCREW
LS607-8 SPACER
MS21919WDG7 CLAMP
P162 NO 11 WINDOW ACTUATOR PLUG (REF)
DM 5621-7PS RECEPTACLE 6
MS21919WDG9 CLAMP
(PICKUP EXISTING SCREW)
.198/.204 (NO 8) DIA HOLE
NAS1096-3-8 SCREW
MS21919WDG7 CLAMP
MS 21042L3 NUT
TERRAIN LIGHT DETECTOR (REF)
793780-1 WIRE HARNESS
793627-1 BRKT. INSTL
MS21919WH6 CLAMP
(PICKUP EXISTING SCREW)
793331-1 WIRE HARNESS
MS21919WH5 CLAMP
(PICK UP EXISTING SCREW)
MS21919WH4 CLAMP
MS21919WH7 CLAMP
NAS1096-3-3 SCREW
MS 21042L3 NUT
MS21919WH9 CLAMP
NAS1096-3-8 SCREW
MS21042L3 NUT
793321-1 SUPPORT INSTL
P174 P176 (REF)
AN515-6R8 SCREW 4 REQ
AN526C-8 SCREW 4 REQ
MS21042L06 NUT 8 REQ
MS21919WDG9 CLAMP
NAS1096-3-8 SCREW
13
FUS STA 359.63
MS21919WDG9 CLAMP
(PICK UP EXISTING SCREW)
793553-1 SWITCH INSTL.
MS21919WDG13 CLAMP
(PICK UP EXISTING SCREWS)
P162 NO1 WINDOW ACTUATOR PLUG (REF)
DM 5621-7PS RECEPTACLE 6
.198/.204 (NO 8) DIA HOLE
MS21919WDG9 CLAMP
NAS1096-3-8 SCREW
MS21042L3 NUT
.198/.204 (NO.8) DIA. HOLE
MS21919WDG9 CLAMP
NAS1096-3-8 SCREW
MS21042L3 NUT
E110 JUNCTION BOX (REF)
MS21919WDG4 CLAMP
PICK UP EXISTING SCREW
TEMP IND. (REF.)
.198/.204 (NO.8) DIA. HOLE
MS21919WDG13 CLAMP
NAS1096-3-8 SCREW
MS21042L3 NUT
MS21919WDG15 CLAMP
NAS1096-3-3 SCREW
MS21042L3 NUT
FUS STA 405.00
P162 NO.7 WINDOW ACTUATOR PLUG (REF)
DM 5621-7PS RECEPTACLE 6
793401-1 BRACKET
(PICK UP EXISTING SCREWS)
P162 NO.2 WINDOW ACTUATOR PLUG (REF)
DM5621-7PS RECEPTACLE 6
.198/.204 (NO.8) DIA. HOLES
NAS 1096-3-8 SCREW
MS 21919WDG4 CLAMP
MS 21042L3 NUT
P162 NO.5. WINDOW ACTUATOR PLUG (REF)
DM 5621-7PS RECEPTACLE 6
793500-1 PLATE
PICKUP EXISTING LOWER SCREWS
NAS623-3-8 SCREWS
MS21919WDG5 CLAMP
(PICKUP EXISTING SCREW)
P335 NO 8 WINDOW ACTUATOR IDENTIFY WITH RED TAPE (REF)
PLUG (REF)
DM 5621-7PSX RECEPTACLE 6 (REF)
P162 NO 10 WINDOW ACTUATOR
PLUG (REF)
DM5621-7PS RECEPTACLE 6 (REF)
P336 NO 6 WINDOW ACTUATOR
PLUG (REF)
DM 5621-7PSY RECEPTACLE 6 (REF)
IDENTIFY WITH YELLOW TAPE (REF)
6.62
4.50 (TYP)
.70 (TYP)
4.0
2.5
1.5
.82 (TYP)
7.50

△7 FOR WIRE COLOR & PIN DESIGNATION, SEE MASTER WIRING DIAGRAM 793242

△6 INSTALL PER DETAIL D

△5 INSTALL PER DETAIL C

△4 GROUND STUD (BOND FAYING SURFACES)
NAS 1096-3-12 SCREW
AN936A10 WASHER (UNDER SCREW HEAD)
AN935-10L WASHER
AN345-10 NUT
TERMINAL LUGS (REF)
AN960D10 WASHER
MS21043L3 NUT
(ASSEMBLE IN ORDER SHOWN)

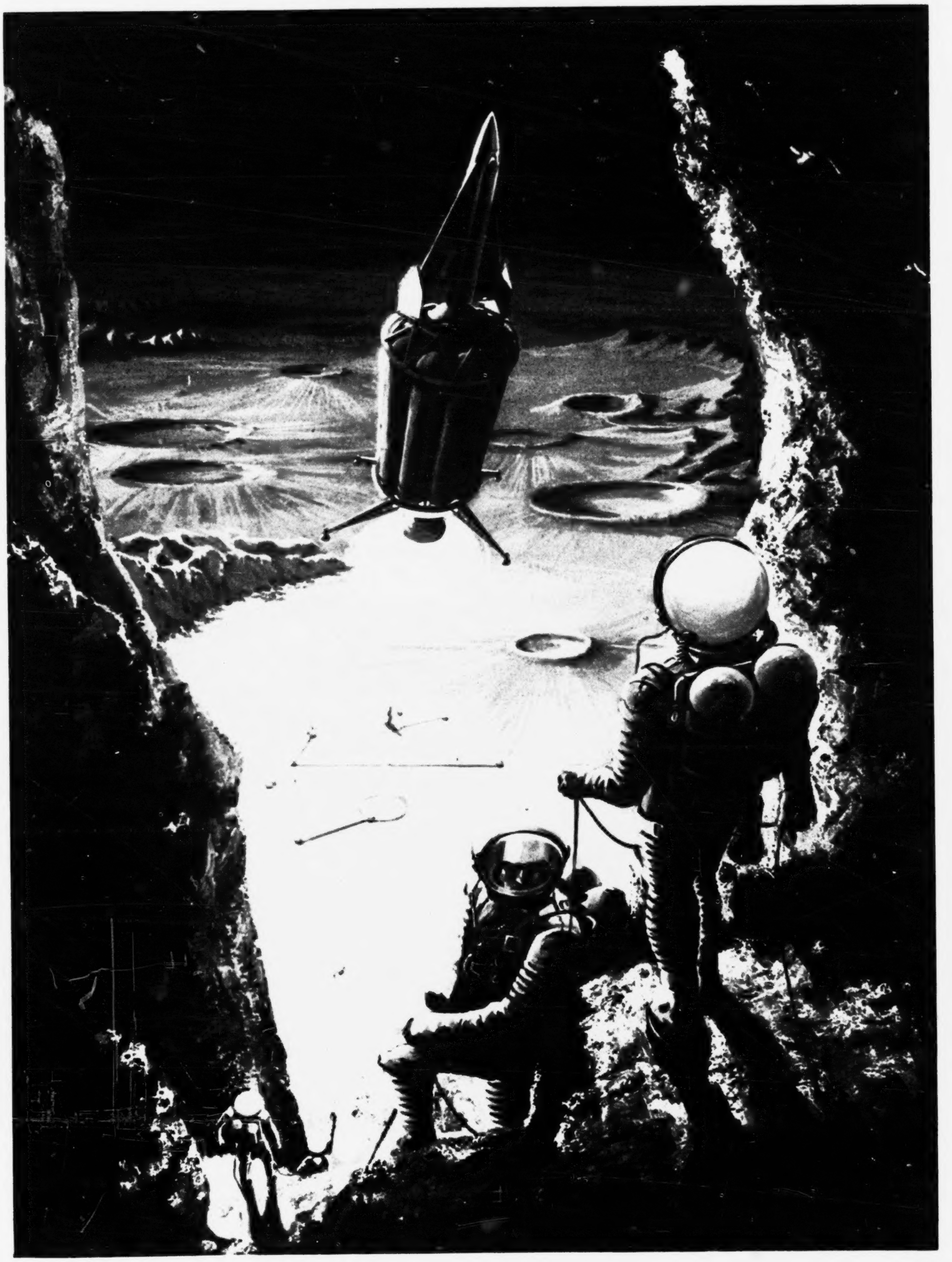
△3 SEAL PER LAC PROCESS SPEC 281-M

△2 COVER WIRE HARNESS AS FOLLOWS INSTALL CLEAR VINYL PLASTIC TUBING SPEC LAC22-964A DIA & LENGTH TO COVER HARNESS. FOR HARNESS ASSEMBLED SPLIT & TIE SLEEVING 300 C TO C USING FIBERGLASS CORD

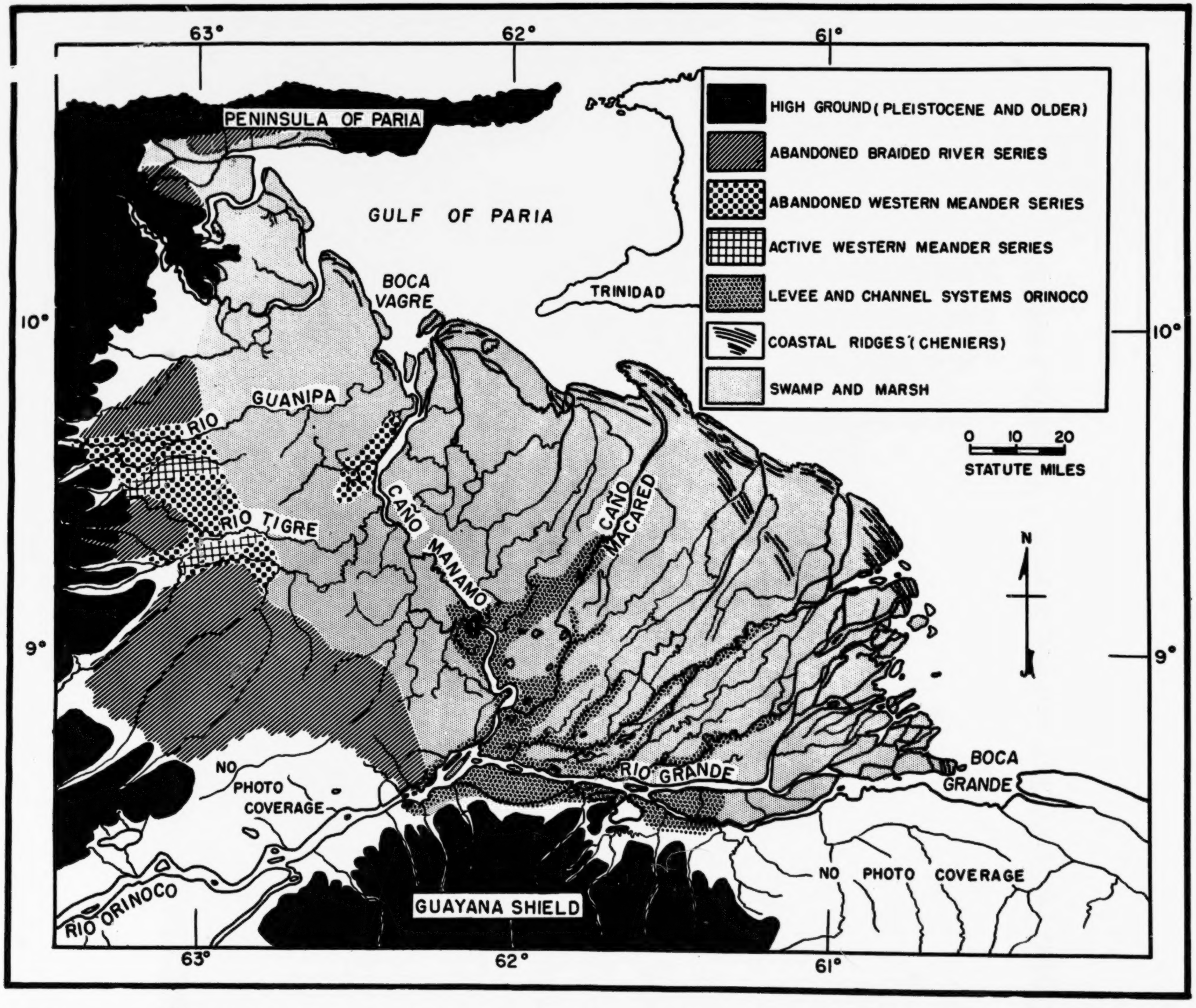
△1 COVER WIRE HARNESS AS FOLLOWS. INSTALL BLACK VINYL PLASTIC TUBING SPEC. LAC 22-964A DIA & LENGTH TO COVER HARNESS. FOR HARNESS ASSEMBLED SPLIT & TIE SLEEVING 300 C TO C USING FIBERGLASS CORD

NOTES:

PRODUCTION ILLUSTRATIONS are drawings that may contain the same illustration techniques as the other forms described here. However, their purpose is to assist manufacturing and assembly employees in putting a product together. Typical uses involve presentation of detailed instructions for a tooling operation or the sequence of steps to follow for a particular assembly. Many times production illustrations are used as substitutes for more complicated blueprints. The drawings are prepared from engineering data, but the user may be a skilled or unskilled workman.



COMMERCIAL ILLUSTRATIONS are not listed as among the primary responsibilities of the technical illustrator; this work is often reserved for the advertising illustrator. However, increased importance is being placed on making commercial illustrations technically correct rather than artistically appealing. This is particularly true in the case of aircraft and missile manufacturers who are producing products to be sold to the more technically minded military services. For this reason, the technical illustrator is sometimes called upon to prepare drawings to be used as part of an advertising or selling presentation.


63°
62°
61°
10°
9°
HIGH GROUND (PLEISTOCENE AND OLDER)
ABANDONED BRAIDED RIVER SERIES
ABANDONED WESTERN MEANDER SERIES
ACTIVE WESTERN MEANDER SERIES
LEVEE AND CHANNEL SYSTEMS ORINOCO
COASTAL RIDGES (CHENIERS)
SWAMP AND MARSH
0 10 20
STATUTE MILES
N
PENINSULA OF PARIA
GULF OF PARIA
TRINIDAD
BOCA VAGRE
RIO GUANIPA
RIO TIGRE
CAÑO MANAMO
CAÑO MACARED
RIO GRANDE
BOCA GRANDE
NO PHOTO COVERAGE
NO PHOTO COVERAGE
RIO ORINOCO
GUAYANA SHIELD

RESEARCH AND DEVELOPMENT illustrations are used to supplement or clarify scientific data. In research publications, the illustrations may show the construction or method of using equipment, or they may be used to delineate a concept. In the development of a piece of equipment, the illustration may be used to communicate a design concept that is difficult to convey by other, less graphic means.

Supervisors of technical illustration departments of industry were interviewed to obtain suggestions for training technical illustrators. The pages of Part Two contain quotations representing a consensus of the suggestions made by those supervisors and recommended curriculums to meet the suggestions. Divisions of the findings of this portion of the survey have been made to make the presentation more convenient and obvious, with industry suggestions and curriculum recommendations for each division appearing on facing pages. The material may be combined to suit special requirements.

PART TWO

INDUSTRY SUGGESTIONS AND CURRICULUM RECOMMENDATIONS

- MECHANICAL TECHNOLOGY
- ELECTRONICS SYMBOLOGY
- PRACTICAL APPLICATION
- FREEHAND DRAWING
- MECHANICAL DRAWING
- GRAPHIC REPRODUCTION
- MATHEMATICS AND TECHNICAL SCIENCE
- GENERAL EDUCATION
- TECHNICAL ILLUSTRATION TECHNIQUES

INDUSTRY SUGGESTIONS

MECHANICAL TECHNOLOGY

"The technical illustrator should understand that the technical drawing is mostly a product of knowledge rather than artistic talent or inherent ability to create pictures," is a statement exemplifying the opinion of technical illustration department supervisors in discussing the need for training in mechanical technology. The illustrator must be able to find on his own initiative and to adapt to his purposes the materials, information, and specifications needed to prepare the required drawings.

Spokesmen of industry have placed blueprint reading high on a list of subjects in which training should be given. Illustrating such a belief is the declaration that "the most important thing for an illustrator to know is blueprint reading." In many cases, an illustrator will work ahead of production and will have to rely on viewing the prints rather than the actual article for information.

To interpret prints adequately, the illustrator must also understand "release paper, design paper, factory type construction paper, blueprints and attached change papers, plus the reasons that change papers come in so many varieties."

Also, the illustrator should be able to do both the parts listing and the illustrating. "The great amount of research time spent in developing the parts list would cut down on the amount of developmental drawing work required if the illustrator performed both tasks."

Understanding and interpreting the specifications to which a book is made were also cited as examples of the background an illustrator must acquire. "Too many professional illustrators do not want to be taught; they believe that their craft has been mastered, and they will not consider professional growth through instruction. Illustrators should be able to make not only a cutaway drawing, for example, but they should also know the specifications against which the book is going to be measured for success or failure."

CURRICULUM RECOMMENDATIONS

MECHANICAL TECHNOLOGY

Mechanical technology as recommended here would be, basically, the familiarization with engineering department systems and procedures. Included would be elements of the following subjects:

1. Engineering department organization and procedures in research and development, production, quality control, maintenance, and modification.

2. Uses and types of engineering drawings, including preliminary and proposal drawings; design layouts; working drawings of detail, assembly, and installation; and engineering and production illustrations.

3. Drawing conventions and symbols, such as standards of dimensioning, numbers, revisions, record strips, and title blocks; symbols pertaining to electric diagramming, heating, ventilating, ducting, piping, sectioning, and welding.

4. Parts lists consisting of an itemization of the various parts of a structure shown on a detail or assembly drawing. These lists contain an exact and orderly identification of each detail on a drawing.

5. Standard and commercial parts available to the technical illustrator from company standards manuals, published handbooks, American Standards, government specifications, or manufacturer's catalogs.

6. Drawing changes or alterations, such as "engineering orders"--sketches showing changes that are reproduced and attached to each print of a drawing.

INDUSTRY SUGGESTIONS

ELECTRONICS SYMBOLOGY

Electronics is a field that has become increasingly important to the technical illustrator. While industry leaders are not asking that its illustrators be trained electronics technicians, they are emphasizing that this is an area for continued study.

An understanding of electronic symbols is invaluable; therefore, in the training of a technical illustrator, symbol function and correlation to blueprints should be explained. One employer, expressing the consensus, felt it essential to make the student aware of this symbol system, showing him that its application serves the same purpose as the alphabet: namely, to communicate.

Beyond a knowledge of symbols and layouts in relation to electronics, employers also advocated "a broad knowledge of circuitry functions." The hiring of a technical illustrator is not dependent upon his having such a breadth of knowledge, many said, "but he would be considered a more valuable employee, not only so far as his immediate hiring is concerned, but also for the development of his future."

One interviewee summarized the statements of the majority with this thought: "If the technical illustrator knew through his instruction only that the best schematic layout is that which turns the least corners, and if he were able to apply the straight line concept, he would be an invaluable man to industry." In relation to the development of schematic electronic diagrams, the technical illustrator "should above all, be able to convert large wiring diagrams to schematics that will fit into the format of a handbook."

CURRICULUM RECOMMENDATIONS

ELECTRONICS SYMBOLOGY

Electronics symbology could be incorporated into several areas of the curriculum--such as mechanical drawing, for example--but because of the almost universal agreement among employers for inclusion of such instruction, it should be given the attention of a special course in the program.

In order to teach an understanding of the symbology, the course would undoubtedly need to include instruction in some of the basic elements in electricity, such as direct and alternating current, magnetism, voltage, resistance, capacitance, and induction. Such a course should also include a class in electric-electronic drafting with emphasis on circuit layouts and schematic diagrams rather than the more traditional emphasis on mechanical drawing.

The combination of instruction in the familiarity of basic electrical and electronic components and their uses with experience in converting such components to symbols on the drafting board would enable students to communicate in the language of electronics symbology with greater skill and accuracy.

INDUSTRY SUGGESTIONS

PRACTICAL APPLICATION

A universal plea of industry representatives was for trained illustrators who have "developed a skill as well as acquired knowledge."

In their concept of the composition of an appropriate curriculum, employers differed; yet their intention was the same. They felt that any occupation-centered curriculum should include those areas of training that would help the technical illustrator obtain employment in any segment of the industry. At the same time, employers stressed that though technique is important, comprehension is more important.

Instruction is needed, in other words, to help the student relate the many techniques he has learned to the over-all requirements of a variety of jobs. "He should have," it was stated, "whatever training is required to give him a broad enough knowledge so that he can develop judgment relating to the over-all scope of his work."

The results will justify the added instruction, the spokesmen felt, because, for example, "when the student comes to understand the presentation data required for a given composition, he is able automatically to give the correct composition."

CURRICULUM RECOMMENDATIONS

PRACTICAL APPLICATION

The problems posed by industry may be met through an additional course designed to give the student an opportunity to apply the knowledge and skills he has accumulated in other courses to technical illustration. The recommended course would call for the student to make drawings from blueprints, technical orders, freehand sketches, and photographs. He could progress from simple parts to assemblies and to installations using exploded and cutaway views. In the final part of the course, he would be required to complete for reproduction entire pages for particular industries, using as projects such things as parts catalogs, maintenance manuals, or service bulletins.

In addition to such a course, another recommended method to provide students with the opportunity to make practical applications of technical knowledge and skill could be established through industry cooperation. Extension of the classroom situation to the occupational experience of life would enable students to participate in part-time employment of a very practical nature. Coordination of the school and representatives of industry in making an agreement for student employment offers a source for such an on-the-job training program.

INDUSTRY SUGGESTIONS

FREEHAND DRAWING

The department supervisors agreed that ability to draw freehand was a basic requirement for the technical illustrator. He should be taught to see and analyze, and then to sketch accurately with a knowledge of good composition.

It has always been true that if the illustrator acquires the basic skill of good composition, then whatever he produces will be pleasing to the eye despite any lack of intent to make a good composition as such.

Another reason, which has the validity of consensus, is contained in the statement, "There are more field assignments than plant assignments for technical illustrators. Only in the field can illustrators find certain information about design, construction, and installation procedures involving equipment that is actually in the prototype stage. Thus, illustrators must be able to develop illustrations by reference to the material and by freehand sketching without access to drawing equipment."

CURRICULUM RECOMMENDATIONS

FREEHAND DRAWING

Full proficiency for the student in freehand drawing is synonomous with mastery of the graphic language. A background of knowledge and skill in sketching provides him with an excellent method for becoming accomplished in instrument drawing. Further, freehand drawings can provide the student, as well as the illustrator, with a technique for visualizing and presenting three-dimensional forms in given positions.

Freehand drawing courses are designed to develop the student's ability to construct three-dimensional forms on a two-dimensional plane. In these classes, forms used in the pictures may be taken from a variety of things, from simple geometric and architectural shapes to the more complicated human figure and landscape elements. While the class presents procedures and techniques of freehand drawing "to develop the skill of having your hand do what your mind conceives," there is always an emphasis on good composition--"the relationship of the forms to each other within the prescribed boundaries of the format" rather than on the camera-like reproduction of some detailed form.

INDUSTRY SUGGESTIONS

MECHANICAL DRAWING

Training in drawing with instruments, or drafting, headed the list of requirements proposed by almost every employer interviewed. In summarizing their suggestions, "Unless the illustrator understands drafting, he will not understand how a blueprint is put together."

As expressed by an employer, "The product of the technical illustrator is created to illustrate a requirement--it is not intended to sell the product. Clarity is far more important than frills."

Among the various facets of drafting mentioned were the following: a knowledge of the drawing instruments and their correct use; skill in lettering (including the use of mechanical aids, freehand techniques, and prefabricated letters); interpretation of the principles of geometry and the ability to construct any basic shape; ability to use the established methods of describing the shape of an object (the orthographic and pictorial); ability to show graphically such technical structures as threads and fasteners, gears and cams, standard parts, and symbols and abbreviations; an acquaintance with ways to construct the various graphs, maps, and topographic drawings; and familiarity with government specifications covering such areas as general drawing practices, dimensions and tolerances, screw thread conventions, and welding symbols.

CURRICULUM RECOMMENDATIONS

MECHANICAL DRAWING

The curriculum proposed for training the technical illustrator in mechanical drawing should include traditional instruction in instrument drawing. Specific areas needed to be covered in these courses are:

- Drawing instruments and their uses
- Construction of geometric forms
- Lettering
- Orthographic projections
- Auxiliary views
- Sectional views
- Dimensioning
- Threads, fasteners, springs, keys, and rivets
- Working drawings
- Intersections and developments
- Pictorial drawing, including axonometric and perspective
- Drawing of gears and cams
- Drawing of welded parts
- Drawing of electrical systems
- Graphs
- Knowledge of government specifications covering drafting

INDUSTRY SUGGESTIONS

GRAPHIC REPRODUCTION

Employers interviewed were unanimous in their assessment of the importance to the illustrator of a knowledge of the processes by which a text and its illustrations are reproduced. It was suggested, too, that some instruction in photography (with its applications and limitations) should be included in the curriculum.

For reproducing publications one employer said, "Many methods work, but the illustrator must be trained to choose the least expensive and best method for the particular job." To do this, he should understand each of the reproduction processes, its possibilities, and its limitations.

The illustrator has many uses for photography. In conjunction with freehand sketching, a self-developing and self-printing camera can be used in the field to capture views of a prototype model that he will later want to use to develop detailed reference material. For more permanent work, he can often use photographs as part of the illustrative material in his publications.

CURRICULUM RECOMMENDATIONS

GRAPHIC REPRODUCTION

After a drawing has been completed, it is usually necessary to make one or more copies for future reference and distribution to many different individuals and firms. A survey course to acquaint the student illustrator with the methods of reproduction should be included in the curriculum. This will familiarize him with the variety of and the applications for exact, rapid, and economical means of reproducing.

A course is recommended that would include diazzo-moist print, diazzo-dry, Thermo-Fax, Xerography, mimeographing, letterpress, and offset processes, giving examples and showing the advantages and limitations of each process. Ideally, the course would provide actual experience in each process area.

Instruction in photography, perhaps, should be more detailed, and could be conducted in the form of a workshop. Areas covered should include elementary camera operation, darkroom processing, microfilms, line etching, photostating, and the other various methods by which a photograph may reach its final state.

INDUSTRY SUGGESTIONS

MATHEMATICS AND TECHNICAL SCIENCE

Industry representatives noted that the technical illustrator should have command of arithmetic processes including ratio and proportion. He should be able to apply his knowledge of ratio and proportion to the scales used in illustration layout, and his knowledge of algebra should include the solutions of simultaneous equations. In each case, his skill should be sufficient to permit him to spot errors and make the necessary corrections.

One interviewee pointed out--and here again it is a statement reflecting the sum--that in the space age an understanding of algebra and trigonometry is needed in order for the illustrator to depict accurately trajectories and fusing circuitries. The employers agreed that although formulas of mathematics are created by the engineer to be copied by the illustrator, the illustrator must be well enough acquainted with formulas to interpret the engineer's notes and elaborate upon the mathematical expression if necessary.

Technical science has become increasingly important to the technical illustrator. As many employers pointed out, "Most of our people, including illustrators, make contributions in solving the diversified and complex problems of the space age."

CURRICULUM RECOMMENDATIONS

MATHEMATICS AND TECHNICAL SCIENCE

Since all companies working to solve problems of the space age need illustrators with a background in mathematics, students with a capability in this area should be encouraged to take as many courses in mathematics as is practical for them. The minimum mathematics requirement for all technical illustrators generally should be:

1. Elements of arithmetic, with emphasis on proportion, ratio, and conversion.

2. Elements of algebra, including such components as the solution of simultaneous equations and common logarithms as applied to problems of multiplication, division, and roots of numbers.

3. Elements of descriptive geometry.

4. Elements of trigonometry, including the solution of those problems involving right triangles.

In the area of technical science, students of technical illustration should receive basic instruction in the properties of matter--including weight, mass, inertia, momentum, and vibration--and basic mechanics--including linkages and levers, pulleys, chains and sprockets, gears and cams, bearings, pumps, and hydraulic systems.

INDUSTRY SUGGESTIONS

GENERAL EDUCATION

Many of the curriculums presently established for technical illustration concentrate on functional training (drawing and blueprint reading, for example) but make little provision for helping the person entering the field gain an understanding of himself and his role in society. Expressing what is no doubt true in a technological era, an industrial spokesman said, "Knowledge as a basis for performance is more necessary than ever before." Another observed that "many illustrators today, with their limited academic education, have a tendency to do only what they are told."

If the technical illustrator is to become fully professional, he must develop maturity and understanding as well as technical skills. He will then extend his creative imagination to meet the new demands and will improve his product. Industrial management cannot entirely relieve the illustrator of this obligation. To attain this maturity and understanding, employers suggested that courses in psychology, history, political science, and literature should be included quite properly in the curriculum.

Emphasis was placed upon the effective use of English. It was described as a significant skill for the man who wishes to achieve success. The illustrator often works directly with the customer, which makes good communication of prime importance. Moreover, the illustrator is often given only a portion of the total copy required, and is asked to finish it accurately. For this a good foundation in English expression is important. In addition, the suggestion was made that the illustrator learn to express himself orally in public. Without this ability to assert his ideas, he "will not be able to advance or to promote himself to his fullest advantage." The training given in a public speaking club rather than an organized class in public speaking was generally suggested for this purpose.

CURRICULUM RECOMMENDATIONS

GENERAL EDUCATION

Employers have expressed the need for education in the sphere of the humanities in order to extend the circumferences of an illustrator's knowledge. As part of such a training program for technical illustration, instruction in the humanities cannot attempt to be an exhaustive coverage of the fields involved, but can merely serve as an introduction to and a stimulation toward further study of such subjects as literature and history.

The recommended program is a survey type that includes elements of psychology, history, political science, philosophy, and literature as these subjects relate to the development of civilization and the individual's place in it.

In a unique position somewhat apart from this program would be a course in English expression. This would contain the usual elements of such courses and, in addition, would utilize a glossary of technical words and phrases that the illustrator may expect to encounter in this occupation. In order to help develop an understanding of and facility for usage of technical language, the words and phrases would be employed in appropriate examples.

INDUSTRY SUGGESTIONS

TECHNICAL ILLUSTRATION TECHNIQUES

The competent technical illustrator today is able to interpret information contained in engineering drawings and convert it into a technical illustration. In addition to being able to read blueprints or work directly from physical parts or photographs, the present-day illustrator must be able to handle any phase of such operations as layout, inking, paste-up, and lettering. Ideally, he should have the ability to apply all of the skills of technical illustration to the job at hand. There is definite advantage in having one illustrator do the whole job, rather than having a team of specialists, each of whom can do only a small portion of the total job.

The thought was offered that "the specialist is really only required in times of special need or rush." Since in a normal work load, the emphasis has a tendency to shift rapidly, the versatile illustrator is far superior to the specialist. When the illustrator can work on many phases in completing the work, he is able to see himself in relation to the total job more clearly and has less tendency to become bored. "Efficiency and pride rise with the degree of involvement in the total product," said the great majority of those interviewed.

CURRICULUM RECOMMENDATIONS

TECHNICAL ILLUSTRATION TECHNIQUES

Firms competing in the defense program require the coordinated efforts of technical illustrators in order to operate successfully. Project deadlines of presentation and production often dictate "crash" programs involving a variety of illustrator skills and techniques. Illustrators are required to meet deadlines in developing charts for promotional programs. Fixed deadlines for periodic revisions of project details complicate normal procedures and frequently require all illustrators to work on one project at a given time.

Student illustrators should be encouraged to develop skills in the various media of technical illustration. Each student may wish to specialize in one or more of these, but he should be acquainted with as many of the others as possible. The greater number of skills the illustrator can master, the more credit he is to himself and his employer.

Technical illustration technique classes should be organized on a workshop basis. The student should be encouraged to try his hand at all the techniques used in industry. These would include at least pencil, ink, and wash drawing; airbrush, freehand lettering, and application of printed letters and symbols. Each technique should be treated as a separate skill, and the student would not be required to take them in sequence. Also there should be no definite length of time to be spent on any particular technique; this would vary depending on the student's interest and ability. These technique workshops can easily be used as "common core" classes in conjunction with commercial art departments of a school.

PART THREE

TEAM TEACHING

TEAM TEACHING

Throughout the interviews on which this report is based, spokesmen of industry indicated that they felt the development of junior college training programs to meet the needs of industry is avoidance of duplicate training. They praised the quality of instruction that is being given; the suggestions contained in this report merely reflect their desire to help the colleges more fully meet the needs of industry.

The role of the junior college is to provide the basic training for entry-level placement of the student completing the program. Industry will carry on the development of the technical illustrator from the foundation provided by the school.

Success of a basic program such as the one described in the preceding pages is obviously directly related to the quality of classroom teachers and the excellence of classroom facilities. It is doubtful that a program such as this can be successfully carried out by a single teacher or by a group of teachers with inadequate classroom facilities and equipment.

The answer seems to be in a "team teaching" approach in some areas and individual instruction in others. The key figure in the entire program is the teacher who would be labeled the "technical illustration" teacher. One of his main functions would be to see that all of the special skills and knowledge each student acquires are brought to focus in the finished products called technical illustrations. It is necessary for this teacher to have a working knowledge of all the latest developments and techniques used in industry. He would also have to be aware of the many limitations of budget and time within which a technical illustrator actually works, and he would have the ability to instill the proper attitudes in the student toward his co-workers and his work. Finally, he would need the ability to exact from the student a high quality of performance and to evaluate that performance. In short, in addition to being a highly skilled mechanic, the technical illustration teacher must have the personal characteristics and teaching abilities that are required of any good teacher.

Two of the areas of instruction seem to lend themselves particularly well to the team teaching approach--humanities and mechanical technology. Possibly, these are courses that could be incorporated in other curriculums, thus supporting the use of specialists on the team.

In addition to the more obvious characteristics of the curriculums outlined here, a close correlation between industry and education should also be maintained, so that new information may be shared by school and industry groups. Symposiums, teacher training programs, and other means of communication would make possible the dispersion of information throughout schools and industries in the state.

PART FOUR

CLASSROOMS AND FACILITIES

Good classroom planning is based on an evaluation and study of aims and objectives, curriculum, and teaching and learning activities. An appraisal of the present program should be combined with the best in current practices to provide classroom facilities and equipment that provide for present and future needs.

The effectiveness of the technical illustration program depends to a large extent on suitable classrooms and proper equipment. It is assumed that most of the schools that plan new programs of this type will not be able to begin with ideal facilities. Each school will want to adjust the recommendations given here to best meet its own needs, and will have to organize its program to fit a particular budget. Nevertheless, certain basic needs should be considered at the outset to prevent program failure or costly alterations.

Much of the technical illustration program can be taught effectively in conventional classrooms. These facilities, however, should be based on modern day activities rather than some archaic concept of teaching or learning. Flexibility of room furnishings, including student desks, storage cabinets, book and magazine racks, audio-visual equipment, and other physical facilities should be provided. Expansibility of facilities to permit expansion or contraction in room size could be planned to enable flexibility of classroom use.

Many rooms and facilities could be combined in "common knowledge" areas existing in the curriculum. These classrooms may include such subjects as:

- Drafting
- Photography
- Technical Science
- Technical Illustration Techniques
- Freehand Drawing

Mechanical drawing rooms may be almost any size or shape. The number of students that may be taught in one classroom depends more or less on organization of teaching rather than any arbitrary limit. It is as easy to teach a large class as a small class if each is organized properly. Drawing tables should be adjustable for both height and tilt of the drawing surface. The height of the student usually varies from 5 ft. to several inches over 6 ft. so that table height and stool height must be adjustable. Storage for the student's equipment as well as for the paper sheets on which he is working should be provided. This may be accomplished either in the drawing table or separate drawers built around the walls of the room. Storage should also be provided for such reference material as blueprints and machine parts. Wash basins with hot and cold running water should be provided for student use--both for cleaning tables and equipment as well as the students' hands. For maximum effectiveness, they should be located as close to the drawing room as practical. Blackboard space that can be seen from any part of the room should be provided.

Freehand drawing rooms should provide for classes of approximately 25 students. Easels, stools, and drawing boards, in addition to light, easily moved drawing tables for each student should be provided. Facilities in the freehand drawing room must be adaptable to a number of different situations--from life drawing, in which all the students must be able to see one model, to drawing still life arrangements--a situation in which the students may group themselves around one of several arrangement areas. Small tables on which to set up still life arrangements should be provided. A sink to wash hands and equipment is essential. A small, movable combination blackboard and screen and a movable model stand are desirable. Display areas for student work and storage space for student equipment should be provided.

Emphasis on the design of technical science facilities should be for maximum use and flexibility. In a laboratory situation in which 25 students are building electromagnets or 25 students are looking through microscopes at the same kind of slide, there is no consideration for individual differences. Each student is doing the same thing at the same time.

Technical science facilities should be built or modified to eliminate much of the regimentation that often occurs. Technical science rooms should be flexible, attractive, and pleasant places to work. They should not duplicate the appearance of clinical or college laboratories. The rooms need to be arranged to permit free movement of both teacher and students. They should be equipped with ample amounts of chalkboard and tackboard, and steel panels for use with magnetized devices should be available. It would be possible to expose visually a few examples of scientific principles in the design and construction of the room. Exposed levers, beams, and balancing devices could, if planned for in the design of the rooms, be used in the instruction program. Through the use of clear plastic shields, many mechanical devices such as switches and thermostats could be made observable. In view of the vast amount of material it is necessary to cover in a technical science class, the teacher should have adequate laboratory facilities located in front of the class. The stress should be on instructor demonstrations rather than student experimentation. Particular attention should be given to the design, materials, and ventilation. Equipment such as sinks, electrical and gas outlets, tables, transformers, hoods, and other necessary articles should be a matter of teacher, administrator, and consultant planning.

Technical illustration techniques, because of their very nature, require special work areas. Facilities should be provided to allow for inking, wash drawings, color and black and white renderings, and airbrush work. Compressed air for use with the airbrush should be supplied by either compressed air tanks or a central compressed air system. A light table and a mechanical means of enlarging and reducing drawings should be provided. A sink with running water is essential. These classes may easily be taught as "common core" classes with the commercial art program.

Photography for technical illustrators should be confined to a workshop type of class. The student should become familiar with various types of cameras, including especially the type that develops the pictures within a few seconds after taking them. The classroom should also contain enlargers and darkroom facilities so that the student may become familiar with the various methods of photographic reproduction that are normally used in industry. This class should usually be part of the regular photography department.

A classroom suitable for the instruction of methods in forming and fabricating metals should be included in the program for student illustrators. This class would emphasize the limitations and methods of working metals rather than production processes.

Modern conventional classrooms used for instruction in the area of the humanities are normally available in every school. There are, however, some considerations that should be made in determining the adequacy of these rooms to provide the necessary facilities. In speech classrooms, for example, arm chairs or tables and chairs should be portable. There should be a raised platform in front of the room, replacing the traditional teacher's desk. The rooms should have acoustical treatment, microphone and loudspeaker connections, and recording equipment. In another example, a mathematics classroom should have as its basic furnishing an adequate chalkboard area; flexible furniture arrangement; a demonstration table in front of the class; and special materials, such as models, slide rules, chalkboard drawing instruments, an overhead projector, and, perhaps, computing devices.

Library facilities

A reference library should be located so that it is easily accessible from the various drawing rooms. This area should contain books, shelves, tables, and chairs. The library should contain reference books on drawing, standards, and specifications. These will be in the form of industry drawing room manuals, data sheets, catalogs, government standards, and textbooks.

The field of technical illustration is a dynamic one, constantly reflecting the refinement and growth of all branches of industry. To keep abreast of the latest developments in the field, it is highly recommended that the technical department at each school build its own library. Since the field is comparatively new, it may be found that the bulk of information contained in such a library will have to come from related fields, such as mechanical drafting, engineering, graphic arts, and the building trades. Many books in drafting, engineering, or art will serve as a nucleus for a technical illustration library.

Ideally, the best practice would be to subscribe to five or six trade magazines offering a broad coverage in a multitude of fields. For example, subscribing to magazines and annuals in plant engineering, modern machinery, the building trades, advertising art, electronics, aeronautics, and graphic arts would give a wealth of information with accompanying technical illustrations on the latest products and processes covering a score of subjects. The advertisements in these publications are often valuable. Since most magazines of this nature publish indexes periodically, each school would have a truly functional and usable reference library. Also, a file could be organized similar to the ones many commercial illustrators maintain. Selected illustrations could be clipped from these magazines and filed alphabetically according to subject matter. Typical headings for file folders might be: Airplanes, Buildings, Engines, Human Figures, Machines, and Wearing Apparel. Samples of good use of composition, including the use of color, as well as examples of good techniques in such areas as wash line and air brushing could be included in the file, providing ready references for the student illustrator. The possibilities are limitless. If this file is used as a handy reference source and not as a substitute, or crutch, for developing ideas, it could be a very valuable tool in broadening student abilities as technical illustrators. Since most of these drawings are copyrighted, of course, they cannot be copied or traced for reproduction.

Technical illustrators must have access to military specifications in order to prepare usable drawings for projects of the armed forces. Illustrations made for the military are regulated by exact specifications, and these regulations vary, depending upon which branch of the service is involved in a project. In addition, definite specifications or standards are required for many nonmilitary illustrations, such as those established by the Air Transport Association of America, and necessitate reference to many volumes of specifications and standards.

Following are sample volumes that should be included in a library established for a technical illustration program:

MIL-STD-1	General Drawing Practices
MIL-STD-2	Engineering Drawings, Sizes, Standards, and Formats
MIL-STD-7	Types and Definitions of Engineering Drawings
MIL-STD-8	Dimensions & Tolerancing
MIL-STD-9	Screw Thread Conventions
MIL-STD-10	Surface Roughness
MIL-STD-19	Welding Symbols

MIL-STD-20 Welding Terms and Definitions
MIL-STD-24 Revision of Drawings
MIL-STD-28 Drawing Titles
MIL-M-5474 Technical Publications
MCMSP-Exhibit 1A Preparation of Technical Manuals
AN parts volumes - specifications, size, and shape
    of parts that satisfy military requirements
Machinery's Handbook, Industrial Press - 16th ed.

Drafting room manuals are prepared by many companies. In addition, societies, associations, and other organizations prepare manuals of specifications and standards such as the following:

MS	Military Standards
NAS	National Aircraft Standards
ASA	American Standards Association

The U. S. Printing Office can supply technical data and military standards, and a bulletin of their coverage for each field can be obtained by writing them. The American Standards Association also has detailed specifications covering most fields of commercial application. Both sources are indexed and can be obtained individually or in complete sets for each field. It is recommended that each school make an examination of those specifications publications that are representative of particular fields of interest to determine which volumes are suitable. A half dozen from both sources would be enough at first to include in the library.

Special Equipment and Materials

The work of a technical illustrator can be simplified and accelerated by the use of special equipment and materials.

Templates. Among the more important templates are those used for drawing circles, ellipses, and hexagons. Other templates are available for illustrating such items as geometric shapes, springs and fasteners, symbols, and equipment.

Proportional Dividers. Another timesaving device used to enlarge or reduce drawings is proportional dividers. Technical illustrators are able to convert distances at given ratios and divide lines into a given number of parts with this device.

Protractors. Special protractors to measure angles on isometric and dimetric drawings are useful items for the technical illustrator.

Commercial Paste-up Material. There are many printed aids available in technical illustration for shading, lettering, using symbols, and indicating parts. These aids are printed on clear sheets and are cut and fixed to drawings. This material is available in a variety of patterns, and special needs can be ordered custom-made.

Drafting Machines. These instruments combine the functions of the T square, triangles, scale, and protractor in one machine. They save considerable time and are used extensively in commerical drafting rooms.

Inking Devices. Several inking pens are available to do line work. Some of these, such as the Wirco Pen, the Leroy lettering pen, and the Rapidograph pen, have various-size points that are easily changed. The conventional ruling pen is generally used for straight line work and speedball pen points can be used for freehand lettering in ink.

Other Equipment. Technical illustrators frequently use other special equipment:

Lettering guides are used in conjunction with several of the inking pens previously mentioned;

Erasing machines do quick and neat jobs of correcting errors;

A process has recently been developed to eliminate the need for inking the final drawing. It consists of drawing on a plastic sheet with a "plastic" pencil, so called because of the material on which it is used. From available reports, it is doubtful that this process saves time over inking at all times. When many subcontractors are involved in preparing a publication, for example, controlling uniformity of line thickness and blackness is difficult with this process.

Useful devices and materials also include adjustable triangles, the Proco rule, drymount sheets, pencil pointers, drafting film, and machines to enlarge and reduce drawings.

Non-graphical Aids. Closely parallel to the work performed on a drawing board are the non-graphical materials and tools used to visualize, develop, and prepare certain shape descriptions. Aspects of non-graphical representation include the use of models showing motion and general three-dimensional models. Such simple items as scissors, glue, razor blades, stencil cutting knife, paper cutter, thumb tacks, rubber bands, an awl, and heavy paper cardboard can be used to construct cutouts of motion in one plane. Constructing clay models provides an inexpensive method for technical illustrators to visualize problems with unusual or complex planes. Cardboard models are especially helpful in solving problems of flat pattern development. Other model materials may include wood and metal.

Display Areas

Tackboards and display areas increase student interest. Articles relating to the industry, job opportunities, wage classifications, and new developments, as well as the daily student bulletin and school announcements are displayed here. On the display boards are placed examples of student work as well as professional work by individuals in industry.

PART FIVE

GUIDANCE AND JOB OPPORTUNITIES

A successful guidance program in technical illustration is one that enables the student to understand clearly his abilities, interests, and opportunities. With this knowledge, education for an occupation can be planned so that it is best suited to the student. Technical illustration could be included in most guidance programs currently offered by junior colleges.

The basic parts comprising a well-planned guidance program include a continuing collection of data pertaining to the abilities, interests, and achievements of each student. The cumulative record extending throughout the student's entire school life should be a part of the junior college records, with new data systematically added.

Individual counseling that utilizes teacher suggestion or counselor direction or both enables the student to understand his record and to develop plans for definite goals. Further, this counseling should be done periodically with tests for specific areas given and interpreted to help the student reappraise his vocational objectives in light of newly acquired knowledge.

Work experience should be provided where possible to acquaint the student with the actual requirements of a particular job. Information for these requirements may be gathered through community surveys, contacts with employers, and coordination with community, state, and federal agencies. In many areas, the night crews maintained by service publications subcontractors offer excellent opportunities to illustrators for part-time employment while they are completing their education.

Follow-up service should be maintained to determine areas in which the program needs to be strengthened. The best method of doing this short of personal contact with employers is through a local advisory committee.

In the field of technical illustration, many educational institutions are receiving advisory assistance from the Technical Illustrators' Management Association. One of the objectives of this association is "education by assisting educators and schools wherever possible." Its membership is composed of management personnel in companies directly concerned with the preparation and reproduction of industrial art necessary to support products and technical illustration educators in the full-time employment of TIMA-recognized educational institutions.

Employment opportunities in technical illustration have, heretofore, been greatest in the aircraft and missile industries, and as the developments in these fields become increasingly complex, the corresponding demand for illustrators continues. Indications are that opportunities in the commercial production areas will also become important as awareness of the potentialities of the technique spreads.

The field is not crowded at the present time, and a good illustrator can make his choice of a great many jobs available throughout the country. An indication of the expected demand in one area of the state is illustrated on the opposite page. The information in this chart is based on a recent survey of the Los Angeles metropolitan area made by the Technical Illustrators' Management Association.

Opportunities in technical illustration are open to both men and women. Indeed, in many phases of the work women achieve greater success than men. Industry now employs many women illustrators and has advanced many of them to positions of high responsibility.

Earnings among technical illustrators vary greatly because of the wide range of work performed and the various skill levels involved. Starting wages for a trained but inexperienced technical illustrator compare favorably with those in other technical areas involving the same skills, and subsequent pay increases are dependent largely upon demonstrated ability and responsibility. Good illustrators earn as much as many engineers.

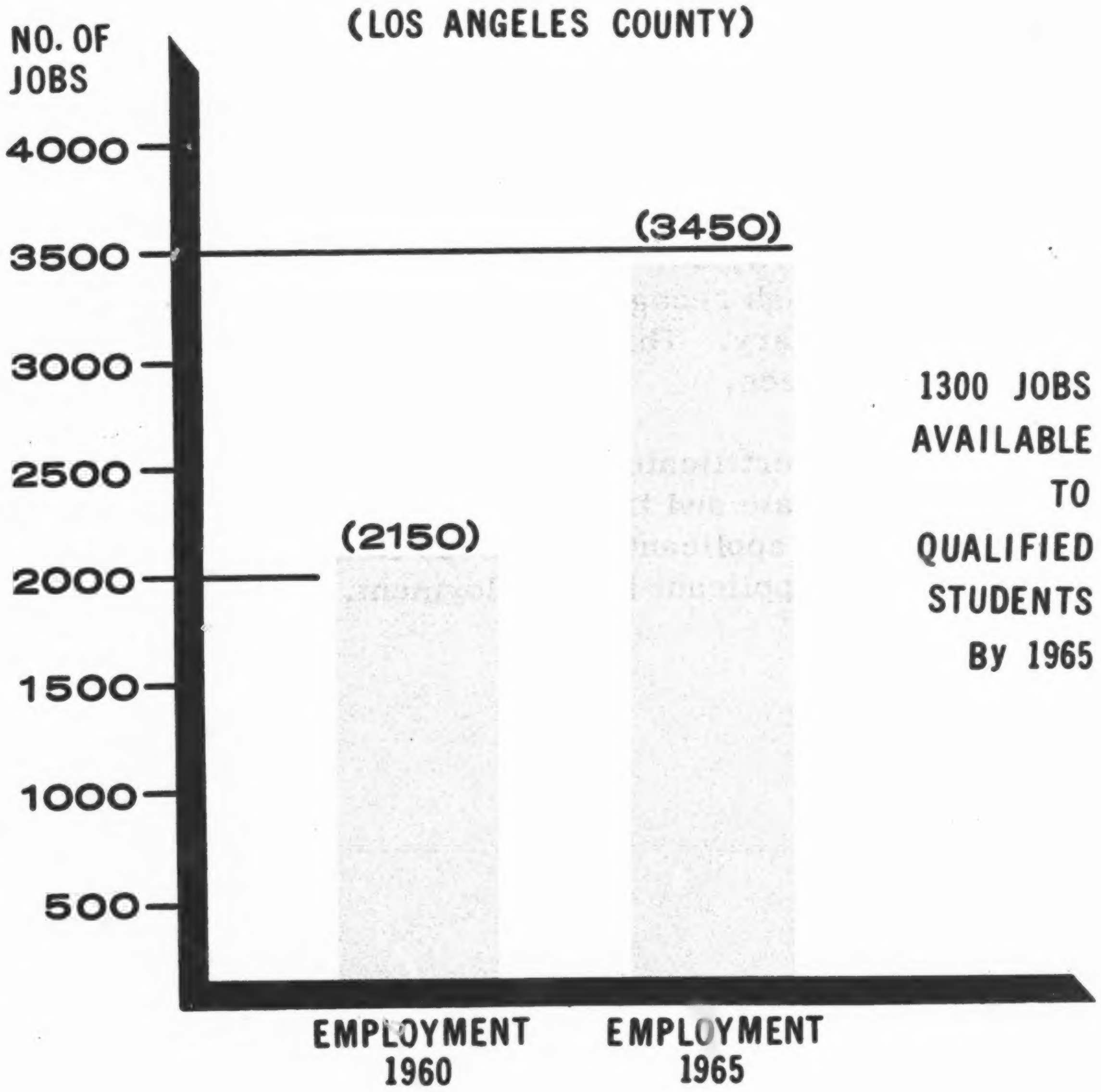
Conditions of employment for technical illustrators are generally good. The close relationship that illustrators have with engineering departments usually assures working conditions similar to those provided for engineering personnel.

According to the survey upon which this report is based, the most valuable technical illustrator has been identified as the one who can do many different types of illustration equally well. In most technical illustration departments, deadlines are set for the completion of the various publications, and often employees must be shifted around in order to complete the work by the given date. Therefore, both the employer and employee benefit when each illustrator is able to perform satisfactorily in the many areas of technical illustration.

The accompanying chart illustrates the anticipated demand for technical illustrators in one area of the state. The projection is based on the most recent data available of employment trends for technical illustrators in Los Angeles County, a survey conducted by the Technical Illustrators' Management Association in 1960. While it is not possible to project such a demand with exacting accuracy, the chart does reflect the static need for competent and well trained illustrators.

PROJECTED EMPLOYMENT GROWTH IN TECHNICAL ILLUSTRATION

(LOS ANGELES COUNTY)



Certificates and Exit Examinations

A more uniform curriculum for the technical illustration field (toward which the findings of this survey are pointing) makes possible additional benefits to both the student and industry at the hiring stage. Conceivably, a standard exit test or final examination and an accompanying certificate should be developed.

Purposes of the exit examination would be to determine the actual ability of the prospective employee in relation to his best efficiency potential. The test would consist of an objective standardization of requirements that should be met by every illustrator who is graduating from a junior college or any other school that offers technical illustration training. The results, if properly standardized and defined, would give the prospective employer an objective appraisal of his potential employee.

Industry representatives have indicated that they feel newly graduated illustrators should be equipped with a certificate that has recognized standards. The certificate would list the number of hours spent in class, and specify the exact areas studied so that anyone acquainted with the field would be able to know exactly how far the student has progressed. If the standards are widely enough recognized, delineation of the content of the course would be unnecessary. This certificate would be required apart from any traditional degrees.

Perhaps the back of the certificate could contain a transcript of the student's work. The certificate and transcript would not be the only factors used in evaluating a job applicant, but these items could be of help in judging the fitness of an applicant for employment.

INDEX

Charts 23
Classroom facilities 59
Commercial illustrations 29
Curriculum recommendations 35-51
Electronics symbology 36-37
Flight handbooks 11
Freehand drawing 40-41
General education 48-49
Graphic reproduction 44-45
Guidance 69
Illustrated parts catalogs 19
Industry suggestions 34-50
Job opportunities 70
Maintenance handbooks 9
Mathematics and technical science 46-47
Mechanical drawing 42-43
Mechanical technology 34-35
Operational handbooks 17
Practical application 38-39
Productions illustrations 27
Repair handbooks 21
Research and development 31
Schematics 13
Team teaching 55
Techniques 50-51
Training aids 25
Wiring diagrams 15

VT 002 849
Job Training for the Mature Woman Entering or Reentering the Labor Force.

Bookman, Celia
Canada Dept. of Labour, Ottawa (Ontario). Women's Bureau
Pub Date - 1Dec64
MF AVAILABLE IN VT-ERIC SET. 41p.

*ADULT VOCATIONAL EDUCATION, *OCCUPATIONAL INFORMATION, OFFICE OCCUPATIONS, *FEMALES, *ON THE JOB TRAINING, EMPLOYMENT OPPORTUNITIES, CORRESPONDENCE COURSES, HEALTH OCCUPATIONS, SALES OCCUPATIONS, EMPLOYMENT QUALIFICATIONS, SERVICE OCCUPATIONS, Canada,

The purpose of the booklet is to suggest some opportunities for training in occupations that may offer employment to women. On-the-job or inservice training, vestibule training, preemployment vocational training, and correspondence courses are described, with addresses of educational facilities offering them listed. Job descriptions, training requirements, and sources of additional information are provided for the following occupations--(1) cashier, (2) dental assistant, (3) food service supervisor in a hospital, (4) hairdresser, (5) medical laboratory technologist, (6) medical record librarian, (7) nursing assistant, (8) occupational therapist, (9) occupational therapy assistant in the mental health field, (10) office worker, (11) radiological or x-ray technician, (12) power sewing machine operator, (13) real estate agent, (14) salesclerk, (15) seamstress, (16) teacher. (17) visiting homemaker, (18) waitress, and (19) writer. Descriptions and sources of information are also given for new projects in adult training in nursing, small business management, teacher education, welfare services, banking, souvenir craft manufacturing, and tourist resort services. (FP)

VT 002 849

ED022065

JOB TRAINING

for the mature woman entering or re-entering the labour force . . . .

WOMEN'S BUREAU

DEPARTMENT OF LABOUR — OTTAWA CANADA

VT02849

"Training is not an end in itself, but a means of developing a person's occupational capacities, due account being taken of the employment opportunities, and of enabling him to use his abilities to the greatest advantage of himself and the community ..."

"Training is a process continuing throughout the working life of the individual according to his needs as an individual and as a member of the community." *

---

* From the Recommendation concerning Vocational Training adopted by the 46th Session of the International Labour Conference in June 1962.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

JOB TRAINING

for the
mature woman entering or re-entering
the labour force

Revised December 1964

Contents

Page

The Women's Bureau

Foreword

Job wanted! 1
  Voluntary service may be the answer 2
  She must measure her occupational capacities 3
Kinds of training 6
Correspondence Courses 10
Training for particular occupations 11
  Cashier 11
    i. In the supermarket or other self-service store
    ii. In other types of business
  Dental Assistant 13
  Food Service Supervisor in a Hospital 14
  Hairdresser 15
  Medical Laboratory Technologist 16
  Medical Record Librarian 18
  Nursing Assistant 20
  Occupational Therapist 22
  Occupational Thereapy Assistant in the Mental Health Field 23
  Office Worker 25
  Radiological or X-ray Technician 27
  Power Sewing Machine Operator 28
  Real Estate Agent 29
  Salesclerk or Salesperson (retail personnel) 31
  Seamstress - dressmaker, alterer, maker of slip-covers, etc. 33
  Teacher 34
  Visiting Homemaker 37
  Waitress 39
  Writer 40
New Projects - Adult Training 42
Provincial Directors of Education 45

The Women's Bureau

was established in 1954 as a branch of the Department of Labour of Canada

- to bring about a wider understanding of the role and contribution of women in the labour force;
- to encourage general competence and occupational skills among women workers looking to the advancement of their opportunities in employment, and
- to promote working conditions conducive to human well-being and efficient production.

Bulletins emphasizing retraining for women are issued by the Bureau from time to time, for example:

Consultation on the Occupational Preparation of Women--Women's Bureau Bulletin No. IV
Opportunities for Continuing Education--"A Second Chance for Women"--Women's Bureau Bulletin No. IX
Day Care Services for Children of Working Mothers--Women's Bureau Bulletin No. XI

These are available on request.

Foreword

Adequate vocational training is the key to women's position in the labour force and to the personal satisfaction of the individual woman in the work she undertakes. For the woman in middle life who needs or chooses to enter or re-enter the labour force suitable preparation is especially urgent. If she is hesitant about her ability to study or to learn new skills, she may take courage from the growing activity in adult education and training throughout Canada. The way may not be easy, but nowadays one has much company in pursuit of "continuous learning". Moreover, as more and more adults commit themselves to further education and training, educators are directing more attention to the perfecting of methods of teaching suited to the outlook and learning capacities of persons who have been out of the stream of formal education for varying periods of time but to whom life experience has given untapped potentialities.

The purpose of this booklet is to suggest some opportunities of training in occupations that may offer employment to women who plan to enter or re-enter the labour force. At the same time, by directing attention to existing possibilities, it may quicken a sense of need for further expansion of adult education and training in Canada.

Mrs. Celia Bookman, Technical Officer on the staff of the Women's Bureau, has been largely responsible for the collecting and arranging of the information contained in the booklet.

Marion V. Royce,
Director, Women's Bureau,
Department of Labour.

Ottawa, December 1, 1964.

Job wanted!

"My husband will be obliged to retire in ten years. For many years his salary was very low and the cost of living gets higher year by year. We sha'n't be able to live on his pension. I'd like to get a job now so that we could save up a bit. Then perhaps we could both retire together. The trouble is I've never had a job. I've just looked after my home and my family."

Mrs. X.

"I am 45, a widow with three children to support. My husband died recently after a long, expensive illness. We used up most of our savings in doctors' bills; he had some insurance but the income is not enough to keep us. I must get a job. Before I was married I worked in a small office, but it's a long time ago. I've lost my speed in typing. I'm afraid I'd have to begin all over again. What could I do to get back into the swing of things?"

Mrs. Y.

"My husband is out of a job. There was a big changeover in the plant where he worked. Now a machine with one man to run it does the work ten men used to do. He hadn't enough seniority to be kept on. I'm afraid it'll be a while before he finds another job. He's collecting his "unemployment", but it won't last long. I have to find work to keep the wolf from the door. I left school when I finished Grade VIII, was young when I was married and I've never had a job. What can I do?"

Mrs. Z.

"All my friends seem to have got jobs. I'd like one, too. My children are grown up and no longer at home; my husband's work takes him away a good deal. I think I'd like to be a receptionist in an office of some kind. I haven't had any experience in business, but it should not be difficult to do that kind of work."

Mrs. R.

"I am a trained nurse but for years I've been taken up with my home and family. Now my children are grown up I really haven't enough to do. Since there is such a shortage of nurses I feel I'd like to go back to nursing. However, I know things have changed a good deal since my day. I'd need some refresher training first."

Mrs. Q.

In today's society there are a great many women like these. They face a new stage in their lives, a new phase of responsibility, often complicated by inadequate income to cope with the high cost of living. There is, for instance, the woman whose children are grown and who is lonely at home with too much time on her hands. There is the woman who for the first time in many years must face life alone, widowed, divorced or separated from her husband, often with the obligation to support herself and her children as well. There is the woman whose husband is unemployed, displaced from his job by technological innovations to which he is unable to adjust. Circumstances and outlook vary with the individual but for all there is the same theme, the desire or need to find a job.

Perhaps you find yourself in a situation similar to any one of these. It is as if you had still another life to plan for, with the chance to do things you've never had time for or with the sudden chilling necessity to earn your own living.

In this situation a woman usually has a sense of urgency to find work as soon as possible. The first step, therefore, is to find out what jobs are available and then try to decide where she can fit best and how she can get the necessary training. Many, never having known the demands of the working world, have little idea of what may be expected of them in a job. That special preparation is essential will not have occurred to them. Indeed, even the woman who recognizes the need for training often has no idea where to find it or, because of pressing economic need, feels she cannot afford the time and expense that will be involved.

There will be the one who says, "Oh, if I had only stayed in school a bit longer and got some training!" Another may say, "If only I had thought of this possibility and got some training while the children were younger, now I'd be ready." Alas, it is too late for regret. She must cope with today's situation.

Voluntary service may be the answer

The woman who is not pressed by economic need often might be interested in voluntary service in a social agency or an organization of the church or synagogue. Voluntary work that calls for her special capacities gives many a woman a sense of personal identity as she becomes committed to the aims and program of an agency or organization.

Voluntary activities vary according to the needs of the community; the possibilities are practically unlimited and may be matched with individual interests and abilities. For instance, one might teach English to newcomers to Canada, assist the staff of a day nursery for children of working mothers, help with the program of a recreation centre for elderly people, work in the planning committee of a social agency or in any number of other ways make a useful contribution to some aspect of community life.

In cities where there is a central volunteer bureau helpful direction is readily available or a woman may go directly to an agency in which she is interested. In enquiring about possibilities she should find what training is offered for the type of work she could undertake. An increasing number of social agencies and organizations recognize the importance of training for volunteers; it not only helps them to cultivate the needed knowledge and skills but also clarifies their role as distinct from that of the professional worker. The trained volunteer has a sense of the dignity and worth of her contribution to the enterprise.

In recent years widespread effort has been made to ensure that job requirements be defined without respect to age. By their very nature, jobs that require speed, "20-20" vision, a very high degree of precision or other qualities, physical or mental, that belong to youth, exclude the older person. Nevertheless, there are many types of work in which the reliability and stability of maturity, provided a woman possesses these, give her an advantage as a candidate for employment.

Job opportunities for mature women entering or re-entering the labour force, however, as in the case of all potential workers, depend upon the general economic situation. Over the past decade employment demand in Canada has been greatest in areas of work in which women predominate. Expansion has occurred in industries that produce services rather than goods, and it is in service occupations, especially types of work formerly done in the home that most middle-aged or older women are employed. Such women have entered the labour force in growing numbers, and many, particularly those who have the confidence that comes from adequate training, have found a satisfactory niche. One finds them altering ready-to-wear clothing, preparing and serving food in cafeterias and restaurants, doing the housekeeping tasks in hotels and institutions, working as hairdressers, as "cleaning women", visiting homemakers or nursing assistants, in general doing work that "oils the wheels" of living for other people. Many are engaged in teaching, nursing or office work, and considerable numbers run a small business. Their occupational capacities are as varied as the women themselves, and most of them are happy to be working.

She must measure her occupational capacities

The occupational capacities of the middle-aged woman are rooted in her experience of living. One of her first needs in seeking a job is to look at her capacities objectively and try to measure their usefulness in the labour market.

If most of her life has been spent in her own home, she will have acquired skills in housekeeping and household management that may stand her in good stead. Home nursing may have quickened her interest in looking after the ill or infirm. If she has brought up children of her own, her insights into child behaviour may be an asset in teaching or some phases of child care. If she held a job earlier in her life, she may want to look into the possibility of reviving her skills and returning to her former occupation.

A hobby or special interest that a woman has cultivated throughout her life often gives her still another source of occupational capacity. It may be gardening, flower arrangement, music, handicrafts, books, dressmaking, photography; almost any varied leisure-time pursuits that enrich an individual's life may contribute to one's capacity to earn a living. Special interests may stem also from voluntary work in which a woman has had invaluable experience in working with other people and in organizing activities that require knowledge of the resources and services of the community.

To gain the confidence necessary to handle a job, however, a woman needs additional special preparation.

If she is returning to an occupation in which she has had previous preparation and experience, she will need refresher training, both to renew former skills and to catch up with new developments. The appropriate professional association or training school will provide information about changed requirements and available courses. If these are not accessible, a woman will find it helpful to consult the National Employment Service (NES). This service, provided through the Department of Labour of Canada, is available free of charge to both employers and employees.

If she needs to upgrade her academic standing or organize her practical skills, the answer may lie in a correspondence course or a series of night or day classes for adults, preliminary to more formal training. In many communities there are special courses for upgrading skills in language and mathematics, required for vocational or technical training. The NES will be able to advise her regarding such possibilities.

For a growing number of occupations definite pre-employment training is required. There are many types of employment, however, in which training on the job is used. In cases where preliminary preparation is not possible a woman should seek the advice of the NES regarding employment which will provide good initial supervision and instruction. Otherwise she is left to learn by trial and error and may never acquire real competence.

To commit oneself to a period of training is often forbidding to an adult, especially to a woman who left school a long time ago and has been absorbed in family cares. In the past vocational training was related almost exclusively to the needs of youth, and many people still regard going to school as exclusively for the young. However, recent years have seen important new developments in continuing education, including vocational and technical training for adults who need or want to change their jobs or wish to prepare to enter or re-enter the labour force.

In every province of Canada a growing selection of courses, organized on the basis of labour market demand, is being provided by public funds through the cooperation of provincial and federal governments. Any man or woman over 16 years of age who is registered with the NES may take advantage of this training. Gradually, too, other courses are being made available to adults. The trend in large centres is to set up an adult division within boards of education, and smaller communities also are beginning to respond to growing demands for adult education and training.

Kinds of training

According to the requirements of an occupation, training is given in various ways:

1. Training on the job, sometimes called in-service training, is instruction and guidance given to an employee either by the employer or a fellow worker during regular working hours for which salaries or wages are paid.

   This type of training is widely used for jobs in which the newly employed person has some proven aptitude, experience or skill but still needs special instruction to be able to meet the demands of regular work. The training may be in the form of individual help given by a supervisor or may be conducted formally in classes. In many instances both methods are used.

   Because this type of training is costly an employer wants to be satisfied that the worker is reliable and has the necessary basic qualifications to fill the job competently. Therefore, applicants are usually carefully "screened" and sometimes, as in the case of the visiting homemaker (see page 37) have a probationary period under supervision before more formal training in classes is provided.

2. Vestibule training is a short intensive period of training for the "breaking-in" of new employees on special machines or operations that require repetitive movements. For instance, it is a form of training frequently given to factory operatives. In fact, some introductory training or orientation is essential for most jobs.

3. Pre-employment vocational training varies in length and content according to the requirements of the occupation for which the individual is being prepared. It is designed to give the student the basic knowledge and understanding required for the work to be undertaken and at the same time enable the trainee to develop the needed skills, attitudes and work habits.

   Such training is usually given in a public or private technical, vocational or trade school, in either day-time or evening classes. Examples of pre-employment training are given under Training for particular occupations.

4. Correspondence courses are being used increasingly as a means of vocational education. They place the major responsibility for self-education on the learner. At the same time, they provide authoritative background material and the opportunity for continuing contact by mail with a qualified instructor. Correspondence courses must be supplemented, however, by a period of practical training and experience under direct supervision.

   If a woman lacks educational requirements for entry to a type of training that appeals to her, she may be able to make up deficiency by enrolling in correspondence courses in academic subjects. If she has such a goal, she is usually able to work out a study schedule that fits in with the claims of her family and household. She may, for instance, take advantage of courses offered through a) provincial departments of education, b) degree-granting universities, or c) private schools.

a) Provincial departments of education offer vocational correspondence courses as a regular part of their education services. These courses are available to residents of all provinces at the same nominal fee. As has already been suggested, however, the skills of an occupation cannot be acquired through correspondence courses alone. A student must also have some experience of the practical side of the subject being studied.

A pamphlet entitled Canadian Vocational Correspondence Courses, published by the Department of Labour of Canada, describes in detail the content of the courses that are available in all the provinces. This may be procured on request from the Canadian Vocational Training Branch, Department of Labour, Ottawa 4.

Enquiries regarding vocational correspondence courses in a particular province may be addressed to the appropriate agency:

Nova Scotia .... Correspondence Study Branch,
Box 1650, Halifax.

New Brunswick .... Correspondence Courses,
Department of Vocational Education,
Fredericton.

Quebec .... Service des Cours par correspondance,
9175 rue St. Hubert,
Montréal 24.

Ontario .... Correspondence Courses Branch,
Department of Education,
559 Jarvis Street,
Toronto 5.

Manitoba .... Vocational Branch,
Department of Education,
280 William Avenue,
Winnipeg 2.

Saskatchewan .... Government Correspondence School,
Department of Education,
Regina.

Alberta .... Department of Correspondence Instruction,
Provincial Institute of Technology and Art,
Calgary.

British Columbia .... Director of Secondary School Correspondence
Instruction,
Department of Education,
Victoria.

All provinces offer instruction by correspondence in academic subjects at least to Grade X and in most cases to the end of high school. These are particularly useful to the handicapped and to people in remote communities, and, as has already been pointed out, may offer a means by which a woman can upgrade her educational standing in order to qualify for further vocational or technical training in which she is interested.

Enquiry regarding these courses may be sent in most cases to the same addresses as are given above. The exceptions are as follows:

Alberta .... Director, Correspondence School Branch,
Department of Education,
Legislative Buildings,
Edmonton.

Manitoba .... Principal, Correspondence Branch,
Department of Education,
Legislative Building,
Winnipeg.

Newfoundland .... Director of Correspondence Tuition
and Scholarships,
Department of Education,
Confederation Building,
St. John's.

Prince Edward Island ...... Supervisor, Correspondence Courses,
Department of Education,
Province Building,
Charlottetown.

b) Degree-granting universities, listed below*, offer programs of study both academic and vocational in nature.

St. Dunstan's University, P.E.I.
Acadia University
Mount Allison University
University of Ottawa
St. Patrick's College
Queen's University
University of Western Ontario
University of Manitoba
University of Saskatchewan (Saskatoon)
St. Thomas More College, University of Saskatchewan
University of Alberta (Program limited to B.Ed. candidates with prior degree, and to graduate students.)
University of British Columbia
Union College of British Columbia

Complete information as to courses offered, admission requirements and tuition fees is covered in a booklet Canadian Correspondence Courses for University Credit, available by writing directly to the Department of Extension, Queen's University, Kingston, Ontario.

In addition, specially-prepared courses on various aspects of business are sponsored through the extension divisions of a number of universities, in conjunction with professional associations, as a means of upgrading individual competence. See page 10 (Correspondence Courses)

c) Private schools, many of which in Canada are branches of American institutions with long and extensive experience, offer a wide variety of courses. These courses are usually more costly than those offered by publicly-supported government departments or universities. Cost, however, does not always guarantee quality. While many of the courses are excellent, there are sponsors who make exaggerated claims. A candidate should enquire into the standing of a private school before subscribing to its courses; this may be done by writing to the provincial department of education or to the Technical and Vocational Training Branch of the Department of Labour of Canada, Ottawa.

Several Canadian universities, Bishop's in Lennoxville, Quebec, Sir George Williams in Montreal, McMaster, Hamilton and Ottawa University have been experimenting with courses through television. Since such programs can be followed at home they may be of interest to a woman who wishes to upgrade her academic standing.

---

* Source: Higher Education Section, Education Division, Dominion Bureau of Statistics, Ottawa.

CORRESPONDENCE COURSES

SCHOOL	COURSE	DATES
UNIVERSITY OF BRITISH COLUMBIA, Vancouver		
Sponsored in association with others Real Estate Council of British Columbia	• Real Estate or Appraisal Course (Correspondence course except for those living in metropolitan Vancouver)	Regular Academic Year (3 years)
ST. MARY'S UNIVERSITY, Halifax	• Chartered Accountant's Examination Problems	
UNIVERSITY OF SASKATCHEWAN, Saskatoon		
Sponsored in association with others Institute of Chartered Accountants of Saskatchewan	• Courses in Accounting leading to C.A.	
Investment Dealers' Association of Canada	• How to Invest Your Money in Stocks and Bonds	10 lessons
UNIVERSITY OF TORONTO, Toronto		
Sponsored in association with others Association of Administrative Assistants	• Certificate Course Includes courses in English composition; psychology; English literature; economics; business law; accounting; business organization; human relations in business; economic geography.	Regular Academic Year (3 years)
Association of Professional Engineers of Ontario	• Business Administration Courses Includes courses in English; economics; business organization; political science; international economics; economic geography; accounting; commercial law; statistics; marketing; transportation economics; human relations in business.	Regular Academic Year
Canadian Association of Purchasing Agents	• Purchasing Includes courses in English; accounting; company policy; departmental organization; commercial law; economics; departmental function; departmental procedure.	Regular Academic Year (2 years)
Canadian Credit Institute	• Credit Management Includes courses in accounting; business English; credits; commercial law; collections; marketing; economics; psychology; retailing.	Regular Academic Year (3 years)
Canadian Institute of Realtors	• Real Estate Includes courses in law; appraisal; brokerage; property management; economics; architecture; accounting; income tax and insurance; town planning.	Regular Academic Year (3 years)
Canadian Institute of Traffic and Transportation	• Traffic and Transportation Includes courses in English composition; economics; transportation economics; commercial law; transportation law; and one optional course from a group of business administration subjects.	Regular Academic Year (3 years)
Certified Public Accountants Association (except in Ontario, where non-practicing courses are offered through the Society of Industrial and Cost Accountants)	• Courses leading to C.P.A. Accounting; auditing; business English; law; corporation finance; business mathematics; economics; administration.	Regular Academic Year (5 years)
Chartered Institute of Secretaries in Canada	• Intermediate and Advanced Courses for Chartered Secretaries. Includes courses in economic theory; accountancy; general principles of law; English; secretarial practice; company law: public administration; advanced economics; mercantile law.	Regular Academic Year (4 years)

Source: Courses for Businessmen, A Guide to Evening Courses, Seminars and Correspondence Courses Offered by Canadian Educational Institutions, available from Small Business Management Division, Technical and Vocational Training Branch, Department of Labour, Ottawa.

Training for particular occupations

Cashier

i - In the supermarket or other self-service store

Duties The corner grocer filling orders on personal request from sacks and barrels of staple commodities has given way to large self-service supermarkets with literally thousands of prepared, pre-weighed and packaged commodities. This change in merchandising methods has created a need for trained workers to carry out the complex operations of the supermarket. Moreover, self-service shopping, which originated with groceries, is now spreading to many other kinds of merchandise, and the need is multiplied.

The cashier in the self-service store is responsible for checking purchases, taking totals on the cash register, handling cash, and in the absence of assistance, packing the merchandise into bags or cartons. She must be familiar with the merchandise and able to detect errors in marked prices. She must be proficient in the preparation of commonly-used forms, handling of premium coupons and trading stamps.

She must be accurate and adept at dealing with large sums of money, quick to detect counterfeit currency, shoplifting or any other customer misdemeanours.

Moreover, because she is the last person with whom the customer comes into contact before leaving the store, she has special responsibility for relations with the public.

Suitability for the mature woman Knowledge of food and general household products gained from homemaking experience may be useful asset to the cashier. The mature woman is likely also to have had considerable experience in meeting people and working with them, and patience with customers is essential in her work. On the other hand cashiers frequently have to work under pressure and stand on their feet for long periods, and this may be fatiguing. Part-time work, often available in the supermarket at peak periods of business, may be an advantage to the woman with family and household responsibilities.

ii - In other types of business

Cashiers are employed in many other types of business - stores of many kinds, theatres, restaurants - where money is collected in large or small amounts in return for goods or services. The name of the cashier's job is usually related either to the location in which she works or to the type of account for which she is responsible. For instance, there may be a cafeteria cashier, a dining-room cashier, a drug-store cashier, a box office cashier, a credit-account cashier and so on.

Irrespective of the location or nature of the business, however, all cashiers do similar work. They receive previously prepared bills, itemized lists of tickets showing the amount due, or themselves make up such accounts. They collect money for payment and may be required to keep a record of daily receipts. They may operate a cash register or a ticket vending machine.

As in the case of the supermarket cashier, they may be required to know the value and features of the various items for which payment is being made. Often a cashier has to check the price tag on the merchandise to see that it tallies with the sales slip, and also wrap the parcel. In the latter case she may be called a cashier-wrapper.

Cashiers are usually given training on the job. Facility in operating a cash register or a simple adding machine is an advantage to a beginner; some months of experience are needed to acquire sustained self-confidence. The work requires alertness, accuracy and a pleasant approach to people under all circumstances.

Dental Assistant

Duties The dental assistant is employed by the dentist to assist in rendering services to the public. She may work in a dental office, dental clinic, hospital or public health service. She makes and records appointments, receives and prepares the patients as they arrive, sterilizes and arranges the dentist's instruments. If she has had adequate training and experience, she may mix and prepare pharmaceutical materials for fillings and special treatments. She orders, stores and cares for chemical preparations and miscellaneous supplies, keeps patiants' and suppliers' accounts and performs related clerical tasks. All her duties are carried out under the supervision of the dentist.

Suitability for the mature woman A mature woman is often able to put the patient at ease. Techniques acquired in the course of years of housekeeping are called into play in dealing with the physical arrangements of the dentist's office and waiting room. Care and precision are necessary for storing supplies, maintaining equipment and keeping accounts.

Training All dentists give their assistants training on the job, but more formal training is also available in a growing number of communities in which night classes are organized to meet twice weekly for a six-month period beginning in October, under the sponsorship of various local dental societies.

The Vancouver Vocational Institute offers pre-employment training for the dental office assistant in a day-time course combining classroom instruction and practical work. In addition the Institute provides an evening program for the upgrading of dental office assistants employed in the Vancouver metropolitan area.

Grade XI education and some practical experience in a dentist's office are pre-requisites for acceptance in most classes. The course includes lectures on dental anatomy and physiology, nutrition, dental nursing techniques, bookkeeping, office procedure and telephone etiquette. On successful completion of such a course and a required period of employment in a dental office, a woman may become a registered dental assistant in the Provinces of Ontario, British Columbia and Alberta.

Further information Since organization and training vary from province to province, further information may be obtained by writing to The Secretary, Canadian Dental Nurses and Assistants Association, 234 St. George Street, Toronto 5, Ontario.

Food Service Supervisor
sometimes called
"dietary assistant", "dietary aide"

Duties The duties of the hospital food service supervisor, food supervisor or dietary assistant, whichever title is used, vary with the size and type of hospital in which she is employed. In a small hospital such a person may assist the dietitian in charge or in some cases may be entrusted with full responsibility for the dietary department. In larger hospitals the food service supervisor is usually assigned two or three responsible, if more routine, tasks.

Suitability for the mature woman Most women enjoy working with food, and the woman who has looked after the needs of her own family for a period of years may with training acquire considerable knowledge and skill in the field of nutrition. With suitable personality and training in therapeutic nutrition, cost control, hospital policies and routines, a mature woman could find work of this type challenging and rewarding. In some instances, too, it is possible to arrange a schedule of part-time work that fits in with the claims of her family and household.

Training Courses for food supervisors or assistants to dietitians are available in several places in Canada. One of these is a three-year course in Home Economics at the Ryerson Polytechnical Institute, Toronto. A diploma is given upon completion of the course; the entry requirement is the Ontario Secondary School Graduation Diploma, including science and mathematics.

A committee of the Canadian Dietetic Association is presently in the process of correlating information regarding various food supervisor courses offered throughout Canada.

Further information may be obtained by writing to:

Miss Joan E. Brown,
General Secretary,
Canadian Dietetic Association,
1393 Yonge Street,
Toronto 7, Ontario.

Hairdresser

Duties The hairdresser, called also beauty operator, beautician or cosmetician, provides a variety of services, mainly related to the care of the hair. She may cut, set, style, shampoo, give permanent waves, bleach or colour the hair. In addition she may give scalp and facial treatments and manicures. Her work requires knowledge of cosmetics for the hair and the skin, since she is frequently asked for advice regarding these. The cleaning of equipment and sterilizing of implements are a part of the beauty operator's duties, and she is expected to take an active interest in maintaining the attractiveness of the premises. In smaller shops she may act also as a receptionist and answer the telephone.

Suitability for the mature woman The basic qualifications of a successful hairdresser are good physical health, a neat attractive appearance, a pleasant personality and inherent artistic ability. A competent mature woman, with sound training, is able to give satisfactory service. Since she must be on her feet constantly, however, it is unwise for a woman to consider this occupation unless she is able to stand, with little relief, through a long working day. The developing of an allergy to certain solutions also presents a problem in some cases. The woman who is interested in the occupation should ascertain in so far as possible that she is free from such tendencies.

Training Training requirements for hairdressers vary from one province to another. A choice between private or public hairdressing schools and apprenticeship or training on the job is available in most provinces. Educational standards for entry to training are flexible for the most part, but the nature of the work itself demands at least elementary school education.

Private schools of hairdressing exist in many communities and often offer excellent courses. The cost of such courses is greater than that of those offered in the publicly supported trade, technical and vocational schools, which are also of high quality.

The length of courses is defined in provincial regulations, average requirements being from 1200 to 1400 hours. In the case of Quebec, however, a 36-month apprenticeship is required. A time credit may be granted to any student who has followed an approved course of instruction. Elsewhere apprenticeship varies from one to three years, again according to the standard accepted in a particular province.

In Prince Edward Island and Newfoundland there are no regulations governing the occupation. Training is wholly on the job in Prince Edward Island.

Further information For information regarding courses in publicly supported schools and the centres in which they are available in your province, write to the director of vocational education in your province (see p. 45). Enquiries regarding courses offered in private schools should be directed to the individual school.

Medical Laboratory Technologist

Duties In its broadest sense the work of the medical laboratory technologist includes all the laboratory procedures that assist in the detection and control of disease, as well as the investigation and maintenance of normal functions of the human body.

The medical laboratory technologist performs diagnostic tests in a hospital or medical laboratory: analyses blood, spinal fluid, sputum, urine, and body tissues in quest of abnormal chemical levels, cells or bacteria; prepares tissue for microscopic examination by the pathologist; performs animal innoculations; prepares vaccines, types blood for transfusion; may engage in research.

Laboratory technologists are employed in hospital laboratories, departments of public health, university or medical research centres, laboratories of private physicians and pharmaceutical and biological companies. They may be found also in Red Cross transfusion services, where they are called blood-bank technicians. Blood-bank technicians are responsible for taking, labelling, preserving, testing and shipping blood supplies and blood plasma to hospitals. The trained technician may also supervise the work of volunteers at blood donor centres.

Duties of the technologist vary with the size of the laboratory. In a small laboratory a technologist may work on a variety of tests and analyses. In large establishments assignments are likely to be specialized, and each technologist may concentrate on particular types of tests.

Why suited to the mature woman Since human life may be at stake and the working material of the medical laboratory technologist highly perishable, serious application to work, a quality associated with maturity, is essential. Since precision and accuracy are needed, the laboratory technologist must be in good physical condition and have good eyesight. It is not the type of work for a woman who tires easily. Furthermore, as in most medical service work, in busy periods or as emergencies arise, technologists may be expected to do shift work and week-end duty.

In smaller clinical laboratories the technologist may be responsible for record-keeping, bookkeeping and filing. Business training or experience is, therefore, an asset.

Training Senior matriculation is the usual academic requirement for entry to an approved school for the training of laboratory technologists. This senior standing must include two science subjects, for instance, chemistry and either physics or biology, and two mathematics chosen among algebra, geometry and trigonometry.

..

There are some 120 hospital laboratories in Canada listed in the 1964 Canadian Hospital Directory[1] where the standard of training for medical laboratory technologists has been approved by the Committee on Approval of Training Schools of the Canadian Medical Association. Students who have completed this training may qualify as registered technologists.

In order to meet the demand for medical laboratory technologists in provincial public health laboratories a number of provincial departments of health have undertaken the training of technical staff. Students follow a program of training on the job in the provincial laboratories supplemented by classroom work.

Length of training varies from province to province, with a year as the minimum and eighteen months to two years preferred. The curriculum includes lectures in science and related subjects and practical experience in the laboratory.

Students follow a planned programme, learning the theoretical and practical aspects of each area of work--biochemistry, haematology, histology, pathology, microbiology and serology.

Most of the new institutes of technology offer courses in this field which vary in length from 18 months to two years. The minimum academic requirement for entry is usually senior matriculation. The instruction combines formal classroom lectures with practical hospital work carried on in co-operation with approved hospital laboratories previously mentioned.

Salaries or stipends are usually paid during the training period, and in some of the provinces, bursaries also are available. Students usually live outside the hospital but may get some of their meals there.

Further information — Information regarding institutions where training is available and the content of courses may be obtained by writing to:

The Canadian Society for Laboratory
Technologists,
99 Wentworth Street South,
Hamilton, Ontario.

---

[1] Published by the Canadian Hospital Association,
25 Imperial Street, Toronto 7, Ontario.

..

Medical Record Librarian

Duties The medical record librarian has been described as "a person trained to assemble and analyse the component parts of the medical record; to determine whether it will justify the diagnosis and warrant the treatment and results before filing; to keep it readily available for use in future illness of the patient, in medico-legal need, or for research and study; and to collect but not evaluate the medical statistics needed in the hospital."*

Her duties, therefore, are to collect records of illnesses and treatments of individual patients, check them for completeness and accuracy, organize and catalogue them. Physicians use these records in studying the patient's medical history, in diagnosing the illness and in prescribing the needed care. Medical records may be used also in analysing hospital services and in working out policies and procedures. They may provide resource material for the training of medical personnel and are useful in evaluating new treatments.

In large hospitals or clinics more than one medical record librarian may be employed but usually one qualified person is in charge with clerical assistants to aid in the work. The medical record librarian must have reasonable efficiency in typing; a knowledge of shorthand may be an advantage but is not required.

Suitablity for the mature woman The work of a medical record librarian requires precision and care for detail. She must have tact and discretion in dealing with people who, because of the demands of their profession--the practice of medicine--work under tension.

A mature woman may find the occupation congenial because, while related to the care of the sick, it is not physically taxing. While it is the practice of most schools for medical record librarians not to accept students over the age of 35 for initial training, each applicant is judged on merit.

The work is both sedentary and active, depending upon the role of the individual librarian. Working hours average eight per day and a five-day week is usual. However, where there is a shortage of staff, overtime is not uncommon.

---

* *Manual for Medical Record Librarians*
Edna K. Huffman, Physicians' Record Company, Chicago, Ill.

Training The Canadian Association of Medical Record Librarians approves 12 schools for medical record librarians. Each of these offers a twelve-month course for which the entrance requirement is senior matriculation or its equivalent.

These schools are established in the following hospitals where detailed information regarding the nature of the training may be procured:

British Columbia:	Royal Columbian Hospital, New Westminster; Kootenay Lake General Hospital, Nelson.
Alberta:	Edmonton General Hospital, Edmonton.
Saskatchewan:	Grey Nuns' Hospital, Regina.
Manitoba:	Winnipeg General Hospital, Winnipeg.
Ontario:	Hotel Dieu Hospital, Kingston; Ottawa General Hospital, Youville Medical Record Librarian School; St. Michael's Hospital, Toronto.
Quebec:	Sacred Heart Hospital, Cartierville; St. Vincent de Paul Hospital, Sherbrooke.
Nova Scotia:	Halifax Infirmary, Halifax.

A student who has satisfactorily completed the twelve-month course is eligible to try the examination for qualification as a Registered Record Librarian which is set by the Board of Registration of the Canadian Association of Medical Record Librarians.

A new extension course for training personnel at the technical level is sponsored by the Canadian Hospital Association in cooperation with the Canadian Association of Medical Record Librarians. First stage is in the form of an 8½-month "home study" session followed by an examination and if successful, certification as a medical record clerk. The second stage, offered only to successful clerks with junior matriculation standing, consists of a three-week intramural session in an approved hospital. Successful students may apply to the Association to write the examination for accredited record technicians (A.R.T.).

Further information For further information write to:

Secretary, Education and Research Committee,
Canadian Association of Medical Record Librarians,
770 Glenforest Street,
Oshawa, Ontario.

Nursing Assistant

Duties The nursing assistant is entrusted largely with bedside care of the physically or mentally ill. It is her responsibility to help maintain a comfortable environment for them. As the duties of the professional nurse have become more highly specialized, the role of the nursing assistant in the medical team has grown in importance.

In private homes the nursing assistant carries out the instructions of the attending physician or visiting public health nurse. She must exercise judgment, therefore, in recognizing nursing needs that are beyond her training and skill. Her work may include household duties related to the comfort and well-being of the patient.

Suitability for the mature woman The exacting responsibilities of the nursing assistant require that she be a person of balance and maturity. While these qualities are not wholly a matter of age, it is reasonable to assume that experience will have given the woman of mature years the needed reliability and stability. Some flexibility is usually exercised, therefore, in determining the maximum age at which training as a nursing assistant may be undertaken. Regulations differ from province to province, with the maximum age ranging from 35 to 55 years.

The work of the nursing assistant is strenuous; to carry out her duties competently and cheerfully she must be in good health.

Training Courses for nursing assistants are available in every province of Canada. In some instances training is given wholly within a hospital; in others classroom instruction is given in a vocational, technical or special school under the jurisdiction of provincial departments of education, with the addition of practical experience in an accredited hospital.

Most of the courses are from nine months to one year in length, though in Quebec the period is extended to 16 or 18 months.

In some provinces special courses, sometimes of shorter duration, are offered for training in the care of tuberculosis or mental patients.

To assist candidates financially monthly or weekly allowances, varying in amount, may be provided throughout the training period.

For information about courses offered in her own province a woman may write to:

Department of Health,
St. John's, Newfoundland.

..

Department of Health,
188 Prince Street,
Charlottetown, Prince Edward Island.

Board of Registration of Nursing Assistants,
6024 Quinpool Road,
Halifax, Nova Scotia.

The Director of Vocational Education,
Department of Education,
Fredericton, New Brunswick.

The Director, Nursing Division,
Department of Health,
Parliament Buildings,
Toronto, Ontario.

Le Ministère de la Santé,
Québec, Québec or

The Association of Nurses of the Province of Quebec,
(courses in both English and French)
640 Cathcart Street,
Montreal, P.Q. or

Comité des hopitaux de Québec, (courses in French only),
4370 blvd. Pie IX,
Montréal 36, P.Q.

The Registrar-Consultant for Licensed Practical Nurses,
Department of Health,
Room 415, Norquay Building,
York and St. Mary,
Winnipeg, Manitoba.

The Director of Vocational Education,
Department of Education,
Regina, Saskatchewan.

The Director,
Nursing-aide Education,
Department of Health,
1321 - 16th Avenue N.W.,
Calgary, Alberta.

Director of Technical and Vocational Education,
Department of Education,
Victoria, B.C.

..

Occupational Therapist

Duties The occupational therapist works with the doctor, nurse, physical therapist, speech therapist, social worker, psychologist and vocational counsellor to enable the rehabilitation of injured or handicapped persons. Under the supervision of the doctor she carries out the prescribed treatment for the physical, psychological and economic rehabilitation of the patient. She also studies the patient's reactions in work situations and reports on his or her condition and progress. The occupational therapist may also be responsible for recreational programs for patients.

Suitability for the mature woman The patience and understanding necessary in the pursuit of this work are often assets of the mature woman. She is also likely to have a working knowledge of some of the skills employed in occupational therapy, as well as the capacities needed to work with people who are handicapped.

Training The shortage of occupational therapists to fill the ever-increasing demand for qualified personnel in all types of hospitals has prompted the Canadian Association of Occupational Therapy to offer an accelerated course to train therapists in eighteen months. This course, given in Kingston, Ontario, includes instruction in anatomy, physiology, psychiatry, psychology, social studies, community resources and rehabilitation facilities, and speech therapy, combined with medical and surgical lectures.

Candidates must hold one of the following or equivalent qualifications approved by the Canadian Association of Occupational Therapy: University Degree, University Diploma, Graduate Nurse or Teacher's Certificate.

Six universities offer full training in occupational therapy in some instances combined with physiotherapy. These are McGill University, Montreal; University of Montreal, Montreal; University of Toronto, Toronto; University of Manitoba, Winnipeg; University of Alberta, Edmonton; and University of British Columbia, Vancouver.

Further information For further information write to:

Canadian Association of Occupational
Therapists,
331 Bloor Street, West,
Toronto 5, Ontario.

..

Occupational Therapy Assistant in the mental health field

Duties The occupational therapy assistant in the mental health field helps organize activities for patients, individually or in groups, and assists with special treatments. She observes the patient at work and reports progress. All her work is done under the supervision of either the doctor in charge of the patient or the fully qualified occupational therapist.

Suitability for the mature woman An interest in people and patience in dealing with them are necessary attributes in helping patients who suffer from mental illness to learn to live and work with others. Here experience gained in bringing up children may be an asset. Encouraging and praising the efforts and successes of patients comes more readily to the mature woman than to a young girl. Experience in Guides, Scouts, 4-H Clubs or similar voluntary organizations may be a valuable asset in this field of work. Skill in arts and crafts, while not essential, can be a useful tool in working with patients.

Training Grade X education or its equivalent is the usual requirement for entering this type of work for which a course of training lasting a few months is provided in a hospital setting. The age range for candidates is from 18 to 45 years.

Further information Information as to training opportunities, scholarships, bursaries (including Federal-Provincial bursaries) may be obtained by writing to the Director of Mental Health for the province in which the woman resides, or to the

Executive Secretary,
Canadian Association of Occupational
Therapy,
331 Bloor Street West,
Toronto 5, Ontario.

Comprehensive information on mental health careers may be obtained by writing to:

Canadian Mental Health Association,
National Office,
52 St. Clair Avenue East,
Toronto 7, Ontario.

Provincial Directors of Mental Health

Newfoundland:
Director of Mental Health Services,
Department of Health,
Hospital for Mental and Nervous Diseases,
St. John's.

Prince Edward Island:
Director of Mental Health,
Department of Health,
Riverside Hospital,
Charlottetown.

Nova Scotia:
Administrator,
Mental Health Services,
Department of Public Health,
Halifax.

New Brunswick:
Director, Mental Health Services,
Department of Health,
404 Collishaw Street,
Moncton.

Quebec:
Director,
Division of Psychiatric Hospitals,
Ministry of Health,
Quebec.

Ontario:
Chief, Mental Health Branch,
Department of Health,
Parliament Buildings,
Toronto.

Manitoba:
Director of Psychiatric Services,
Department of Health,
Psychiatric Institute,
Winnipeg.

Saskatchewan:
Director, Psychiatric Services Branch,
Department of Public Health,
Provincial Health Building,
Regina.

Alberta:
Director, Division of Mental Health,
Department of Public Health,
Provincial Mental Hospital,
Box 1000,
Ponoka.

British Columbia:
Deputy Minister and Director of Mental Health Services,
Department of Health Services and Hospital Insurance,
828 West 10th Avenue,
Vancouver.

Office Worker

Duties Office work includes a wide variety of clerical tasks. These may be grouped according to similarity of duties, training and personality required.

The secretarial group is primarily concerned with typing and correspondence.

The public contact group deals more or less directly with the public.

Records and processing clerks handle and process correspondence and records.

The accounting group is occupied mainly with recording and analysing financial data.

Increasing mechanization of office operations has opened up demand for people trained in the operation of various types of mechanical office equipment.

Suitability for the mature woman Employment and placement reports from all parts of the country reveal little or no shortage of average beginning typists or clerk typists. At the same time, however, there is strong and steady demand for expert typists, efficient stenographers and well-qualified secretaries. It is important, therefore, for the woman re-entering the field to invest the necessary time and effort to acquire competence by bringing herself up-to-date on current office methods and equipment. Her self-confidence and her bargaining position will be greatly enhanced if she does not have to rely on "brushing up" on the job.

Training Training for office occupations is widely available in both day and evening classes offered by private business colleges. Publicly-supported training and vocational schools also include commercial courses in their curricula. Courses are of three, six and nine months' duration, depending upon the proficiency to which the student aspires. In most cities evening classes, under public as well as private auspices, are conducted. These night schools provide means for women otherwise occupied in the day time to learn office skills.

Since private commercial schools are numerous and standards vary greatly, it is well for prospective students to check carefully prior to enrolment. One might look into the placement record of graduates of the school or enquire from the local Better Business Bureau.

..

Correspondence courses in commercial subjects are available through provincial departments of education.

Further information A more adequate description of the occupation is contained in the Canadian Occupations Monograph 46, Office Occupations available from The Queen's Printer and Controller of Stationery (Cat. No. L43-4660). Price 25 cents.

Enquiries about night school classes should be addressed to the local board of education.

Radiological or X-ray Technician

Duties The radiological or medical X-ray technician is responsible for the preparation of patients for x-ray examination or treatment. Working always under the direction of a qualified physician-radiologist the technician operates various types of equipment used to project an image of parts of the body on a screen for examination by the radiologist; uses x-rays in the treatment of certain illnesses, mainly cancer or skin diseases, and takes routine x-rays as required. She regulates controls for time and intensity of exposures, develops films, marks and files them and prepares final reports.

Suitability for the mature woman Tact, mature judgment, accuracy and attention to detail are essential in working with patients undergoing treatment. They are often victims of serious disease or accident and always in need of sympathetic understanding.

A background of nursing or office experience with knowledge of typing can be brought into effective use. The hobby of photography or professional experience as a photographer may be an advantage.

In view of the possible effect of X-ray exposure on the fertility of women during child-bearing years, this occupation lends itself well to the older woman.

Part-time employment as a radiological technician, sometimes available in a hospital, a clinic or a doctor's office, may be conveniently combined with the homemaker's duties.

Training A two-year course of study under a certified radiologist in private practice or in certain approved hospitals is available in all provinces. The minimum academic qualification is Grade XII or university entrance.

Instruction is given in handling patients and helping them into position for the X-ray photograph. Trainees also learn how to operate and care for equipment, how to prepare solutions and chemicals used in developing films and to keep records and reports. While in training the student receives a stipend, uniforms and meals. When the course is completed students may write an examination for a certificate issued by the Canadian Society of Radiological Technicians and if successful may use the title, Registered Technician (R.T.).

Further information

Provincial Director of Vocational
Education or
The Secretary,
Canadian Society of Radiological Technicians,
2175 West 16th Avenue,
Vancouver 7, B.C.

Power Sewing Machine Operator

There is in Canada a persistent and continuing shortage of power sewing machine operators for the clothing manufacturing industry. Often employers are obliged to recruit trainees when they really need experienced workers.

Training for power sewing machine operators is sometimes offered in publicly supported vocational establishments and also by organized labour.

Recently however, in the Province of Manitoba a committee, representing the provincial departments of Industry and Commerce, Labour, Education and the National Employment Service, has developed a promising scheme of in-plant training for power sewing machine operators in the clothing industry. The Committee approves participating manufacturing concerns and selects suitable trainees.

A Certificate of Attainment issued by the Vocational Branch of the Department of Education is awarded to trainees who successfully complete the course.

This scheme is meeting with favourable results and several other provinces are considering the introduction of a similar program.

Manufacturers of draperies, bedspreads, upholstery and camping equipment often make provision for on-the-job training of operators.

Further information may be obtained from offices of the National Employment Service.

Real Estate Agent

Duties "The real estate agent rents and sells property for clients on a commission basis".* The agent brings together prospective buyers and available property. She keeps abreast of current property listings and examines properties for sale so she can be familiar with what she has to offer. A great deal of her time is spent keeping in touch with prospective buyers and sellers. She takes clients to see properties, often returning several times to the same premises before concluding a transaction.

Suitability for the mature woman The sale of homes is the field of real estate most likely to be of interest to the mature woman. From her own experience of homemaking and housekeeping she can point out features and possibilities that might not occur to the average buyer. The clerical aspects of the real estate business can be successfuly carried out by a woman with previous secretarial and office experience. Real estate business being highly competitive, calls for ingenuity, stamina and specific training. Since special aptitude in selling is required, it is advisable for a woman seeking entry into this field to take an aptitude test. Other types of selling experience may provide helpful background. Real estate has proven to be a successful career for women prepared to put in long irregular hours, persistent work and travel in all kinds of weather, at the expense of social and family life. Despite these difficulties, however, over the past decade women have made up about 15 per cent of personnel in the selling of real estate.

Training An applicant for entry into the field must be sponsored by a real estate firm and qualify by examination for a licence in conformity with the licensing laws of the province. Except in Newfoundland the required standard is based on legislation governing real estate within the province.

A period of training on the job in a real estate office or working with an experienced member of a real estate firm is useful preparation. Further formal training is usually available to personnel employed with firms which are members of the local real estate board. This board-sponsored training, conducted by qualified personnel, covers such subjects as appraisal, law, property management and zoning. Examinations leading to membership in the board are conducted periodically at the conclusion of such training.

---

* Dictionary of Occupational Titles

To raise standards and qualifications of agents in the field, the Canadian Institute of Realtors has also prepared and made available a correspondence course through the Division of University Extension, University of Toronto. The course, which is at the university level of instruction, is of three years' duration, with written examinations leading to designation in the Canadian Institute of Realtors. Brokerage, law, appraisal, accounting, property management, economics, architecture, insurance, income tax and town planning are the subjects included.

Further information Further information may be obtained by writing to:

Executive Secretary,
Canadian Institute of Realtors,
20 Eglinton Avenue East,
Toronto 7, Ontario.

Salesclerk, Salesperson
(Retail selling personnel)

Duties The woman engaged in retail selling is the link between the supplier and the consumer. The title of her job depends upon the nature of her work.

The salesclerk sells a variety of smallwares directly over the counter, completing each sale on her own. She is usually responsible also for maintaining and arranging stock, ordering additional supplies when necessary.

The salesperson does a more highly specialized job and her occupation is classified according to the product she sells whether it be jewellery, women's clothing, books or some other type of merchandise.

She displays, describes and sells merchandise on the sales floor. She must have expert knowledge of the merchandise and quick understanding of the customer's needs in order to assist him or her in making a satisfactory selection.

To complete the purchase she prepares a bill of sale or contract for the customer's signature. She receives payment or secures credit authorization and makes arrangements for delivery when necessary.

She is responsible for the arrangement, maintenance and care of the stock and for keeping inventory records for her particular department. She also looks after details in connection with exchanges and returns.

Suitability for the mature woman A survey of the retail trade carried out in 1959 by the Economics and Research Branch of the Department of Labour showed that older sales employees have at least as good a record of performance as their younger co-workers. The majority of supervisors interviewed expressed preference for mature employees. On the whole they showed consistency of performance, a sense of responsibility, a more settled attitude and an ability to inspire confidence in the customer. They also were often more conscientious than younger workers in their "housekeeping" duties.

With the modern trend towards self-service shopping, routine transactions such as making change and wrapping parcels are being increasingly centralized. The number of salesclerks is being reduced, and in establishments which offer assistance to customers employers are becoming increasingly selective in hiring salespersons for specialized selling.

Specialized fields of selling, while limited in employment demand, may offer job opportunities for mature women who have the appropriate skills or interests. For example, the woman with skill in dressmaking and knowledge of clothes design is an asset to a good dress shop. A woman who possesses artistic ability and has mastered a particular handicraft, such

..

as weaving, sculpting, painting, leathercraft, knitting or needlepoint is better able to interpret the merchandise of an arts and crafts or hobby shop. The bookshop looks for salespersons who know books and have a discriminating taste in literature.

Similarly, other specialties might be listed. The shop that caters to discerning and sophisticated buyers requires salespersons who know their merchandise. Moreover, sales personnel of this type, who are really interested in their work, will find ways of improving their knowledge and skills through individual study or in groups for further instruction. What began as a job then may become a career.

Training For the most part training in retail selling is given on the job under the supervision of a senior member of the staff. In larger department stores a series of training sessions may be provided for new employees. Recently, however, formal training for the retail occupations has been initiated in various institutes of technology.

Sir George Williams University in Montreal offers a two-year course in its School of Retailing. Night school courses in merchandising are widely available, and brief training courses for retail sales personnel are being offered for the unemployed in centres where there is considerable demand for this type of employee. The local NES office is in a position to supply information regarding current developments.

To increase her confidence in a specialized field of selling the woman who is looking for such a post may well undertake some preparatory study and, if possible, acquire some practice in her field. To discover training opportunities will require both effort and imagination. Some possibilities may however present themselves in night school, university extension courses or in the curriculum of a technical school. The advice of a merchant may also prove helpful. For instance, on the suggestion of employers a number of jewellery salespersons have profited by a two-year correspondence course for the retail jeweller, offered by the Canadian Jewellers' Institute, 800 Bay Street, Toronto.

Further information Director of vocational education in your province.

..

Seamstress

Dressmaker, alterer, maker of slip covers, etc.

Duties Specialty shops and the dress departments of large stores employ women to alter, adjust or remodel ready-to-wear clothes. Fabric shops and drapery departments frequently engage women to make slip covers, bedspreads and curtains for individual customers. Some women, although their numbers are diminishing, have been able to develop rewarding home business ventures in this type of work.

Suitability for the mature woman Since aptitude and craftsmanship are the main criteria for success as a seamstress, the mature woman is not apt to be discriminated against because of her age. Frequently jobs in this field may be fitted into a part-time schedule along with home duties.

Training Courses in dressmaking and interior decorating, varying in content and duration, are offered in trade schools and vocational or technical institutes, both in daytime and evening classes, in many cities throughout Canada.

While often not strictly vocational, such training may teach a woman how to sew more professionally and give her a sense of confidence in looking for employment.

Further information Further information regarding such courses may be obtained from the local board of education.

..

Teacher

Duties The teacher is concerned with education, including some form of systematic instruction or training. Teaching is usually done in the classroom, but there are increasing opportunities in various fields of specialized education, often involving work with individuals.

These include teaching in a particular field such as music, as well as work with pupils who cannot fit into the regular school system: sick children at home or in hospital, the hard of hearing, the blind, the exceptionally gifted or the retarded. Corrective education for juvenile delinquents in reformatories and detention homes is still another example of specialized education.

In recent years the increase of adult education programs has substantially increased the demand for teachers with competence in that field. At the other end of the age scale there are interesting developments in nursery school teaching.

Since a university degree is required for teaching at the secondary school level, most women teachers without a university background are found in the elementary schools. Nursery school and kindergarten teaching employ women exclusively. Women are engaged as vocational teachers, chiefly in training for workers such as hairdressers, waitresses or nursing assistants and commercial subjects.

Suitability for the mature woman Insights into the behaviour of children that a woman has acquired in bringing up her own family are an asset of the mature woman teacher. If she taught earlier in her life, she now feels more secure in the profession. Not surprisingly, therefore, teaching is an occupation to which many mature women, after a brief refresher course, return with renewed vigour.

The hours of classroom work and holiday schedules help to make teaching an occupation that may be combined with the duties of wife and mother. It must be kept in mind, however, that preparation of lessons, marking of assignments and extra-curricular duties require a great deal of time outside of school hours.

A growing number of married women with family responsibilities are finding satisfaction in areas of specialized education for which they have the necessary qualifications. The schedule of such teaching, including time spent in lesson preparation and in the correction of assignments, is often more readily fitted in with household routines than is classroom work.

Training Standards of training for teachers are determined provincially. For teaching in the elementary schools the requirement is usually a period of one, two or three years' training beyond junior

..

matriculation in a special teachers' college. For specialized education, especially for work with the handicapped, a background in nursing, occupational or physical therapy, or social work is often of practical value.

Summer courses play an important part in teacher training and upgrading and may offer the woman who wants to return to the field the opportunity for re-orientation to the profession. Regarding other types of refresher courses enquiries should be made through the local board of education. Since some municipalities impose age restrictions on new entrants to teaching in the public schools, it is well to check also regarding this matter.

The mature woman who is interested in nursery school teaching should enquire into university extension courses in this field. The University of Toronto, for instance, offers a six weeks' extensive course in nursery school work for persons with Grade XII standing. In British Columbia the Summer School of Education in Victoria and the Adult Education Division of the Vancouver School system offer training in nursery school work primarily for qualified public school teachers. Ryerson Polytechnical Institute in Toronto offers an option in pre-school education in its two year full-time programme in Home Economics. This prepares the student for work as an assistant in a nursery school or day nursery. Full university training for nursery school work, in some cases at the level of graduate studies, is offered by several universities: Acadia University, Wolfville, N.S.; Institut Pédagogique, 4873 Westmount Avenue, Montreal, P.Q.; Laval University, Quebec, P.Q. and the Institute of Child Study, University of Toronto.

A recent Women's Bureau Bulletin--Day Care Services for Children of Working Mothers--outlines courses in nursery education available, by provinces. A copy of the bulletin will be sent on request.

Training for teachers of technical and vocational subjects is provided for in all provinces, though not every province operates a program. Women have participated chiefly in the training for teachers of commercial subjects, hairdressing, practical nursing and food service. Courses are usually from five to nine months in length. Competency requirements are set by the province, and enquiries should therefore be addressed to the appropriate Department of Education.

Further information

Further information on teacher training and assessment of qualifications may be obtained from provincial Departments of Education:

Alberta

Department of Education,
Legislative Building,
Edmonton.

British Columbia	Department of Education, Parliament Buildings, Victoria.
Manitoba	Department of Education, Legislative Building, Winnipeg.
New Brunswick	Department of Education, Legislative Buildings, Fredericton.
Newfoundland	Department of Education, Confederation Building, St. John's.
Nova Scotia	Department of Education, Province House, Halifax.
Ontario	Department of Education, Parliament Buildings, North Wing, Toronto.
Prince Edward Island	Department of Education, Province Building, Charlottetown.
Quebec	Department of Education, Parliament Buildings, Quebec City.
Saskatchewan	Department of Education, Legislative Buildings, Regina.

Visiting Homemaker

Duties The visiting homemaker provides emergency service in families where sudden illness or incapacity necessitates the absence of the mother. Homemaker service is also being extended to convalescents, elderly people and chronic invalids.

The visiting homemaker must be able to "step in and take over". She assumes responsibility for the general management of the family shopping, preparing meals, giving simple bedside care, keeping the house tidy and doing necessary laundry where equipment is available.

It is not intended that a visiting homemaker should undertake major cleaning jobs. The service is rather designed to help families in times of emergency: to give young children and infants the love, care and attention they need; to enable older children to carry on at school without the disruption of sudden moves and changes; and to enable the father to continue at his job with the knowledge that his family is being adequately cared for.

Normally, the working hours are limited to eight per day, five days a week, with provision for members of the family or others to assume responsibility during the homemaker's absence.

Suitability for the mature woman The visiting homemaker holds a position of trust and responsibility that challenges the resources of a mature woman with a natural liking for people and a genuine desire to give assistance in times of need.

The duties of the visiting homemaker are essentially an extension of the functions she has been performing throughout her lifetime, but she now has the advantage of guidance and training offered by the team, consisting of the visiting nurse, social worker and home economist.

Training Homemaker services exist in some fifty communities across Canada. Their organization varies from one place to another with the Red Cross or other voluntary agency as sponsor.

Applicants are carefully selected by the supervising agency and given in-service training and orientation before being assigned to jobs. Most agencies stipulate a probationary period of from three to six months, and on each assignment the visiting homemaker receives supervision taking into account the particular situation. Further training provided by the agency usually takes the form of periodic lectures and discussions on social problems, child care, hygiene, home economics, meal planning, safety and fire prevention, laundry and general household duties.

..

Further information — Further information on visiting homemaker services in your community, including training plans and opportunities of employment, may be obtained by applying to the local branch of the Red Cross, the local visiting homemaker's association (if one exists), the Community Chest, a family welfare agency or the local office of the National Employment Service.

Waitress

Duties The waitress is responsible for the serving of food in a restaurant, hotel, club or other eating establishment. She interprets the menu, takes the order and serves each course of the meal. After the patrons have left she clears the table and re-sets places for future customers. She is responsible for making out meal checks and sometimes also for collecting payment.

Suitability for the mature woman The waitress must be thoughtful and sensitive to people's needs, qualities that are associated with maturity. At the same time her duties are physically demanding. During peak periods she must often work under grilling pressure and is on her feet almost constantly.

Training Most good eating establishments provide training on the job for promising applicants. Since a basic knowledge of language, reading, writing and arithmetic, a neat, well-groomed appearance and a genuine liking for people are the essential qualifications of the waitress, these are usually stressed in the training.

In many centres across Canada day and evening courses in the home arts, including such skills as cooking, table setting, food arrangement and salad making are given in publicly-supported vocational and technical schools. This type of course may prove helpful for a woman contemplating employment as a waitress.

Training for waitresses and other personnel engaged in hotels and motels is sometimes sponsored provincially in order to ensure high quality service for travellers. Information about opportunities of this type may be obtained from provincial hotel associations or tourist services of the provincial governments.

Further information A list of recommended eating establishments in the community may be obtained by writing to The Canadian Restaurant Association, 60 Avenue Road, Toronto 5. The local board of education or NES should be consulted regarding available courses for restaurant workers, including waitresses.

Writer

Duties Work in the field of writing may include such occupations as newspaper reporting, freelance writing, script writing for radio and television, technical writing, editing or feature writing.

Newspaper reporters collect information about events and personalities of current interest and write news stories for the daily or weekly press. Since even in small newspapers there is usually some specialization, most women reporters are assigned to so-called women's interests. Only occasionally is a woman given a more varied range of assignments. Sometimes the rural or small town newspaper offers a beginning in a special field which the individual woman may pursue.

Freelance writers, among whom there are a few successful women in Canada, tend to have wider scope; some, for instance, concentrate on the production of technical material on a subject in which they have acquired expertness. On the whole, however, freelance writing is for women, as it is for men, a secondary source of income.

Editorial work in legal, scientific, commercial and historical journals engages a considerable number of women who, in addition to writing ability, possess interest, education and experience in a particular field of knowledge.

Authorship is the reward of years of concentrated research and hard work on the part of a person who has cultivated the art of writing.

Suitability for the mature woman Occupations in the field of writing bear no age barriers; in fact, this is a field where maturity is often an advantage. Moreover, it is an occupation that, with careful planning of her time, a woman can fit in with her schedule of housekeeping and family responsibilities. It is highly demanding and creative work. Basic requirements are the necessary aptitude and willingness to persevere. Breadth of interests and specialized knowledge or experience in a particular field are also essential. A good knowledge of typing is an asset, indeed, a prerequisite for some courses in journalism.

Training Degree courses in journalism are offered in several universities. The Ryerson Polytechnical Institute in Toronto offers a three-year course at post-high school level which includes techniques for researching and writing news and feature stories, copy lay-out and interpretative reporting.

Less formal preparation may be acquired through study groups and workshops on various phases of writing given in the evening extension departments of several universities. Subjects such as magazine writing, poetry writing, short-story writing, writing for broadcast, both radio and television, and for advertising are dealt with in these sessions.

..

Correspondence courses in writing are available on a commercial basis but should be selected with care, since some of them may make exaggerated claims.

Further information Enquiries regarding courses in writing may be addressed either to the schools mentioned or to the local board of education.

New Projects in Adult Training

Quo Vadis School of Nursing, Toronto

Nationwide interest is being focussed on a significant development in the field of training for women between the ages of 30 and 50 to become registered professional nurses.

The course, which will be two years in length instead of the conventional three years is being conducted by the newly organized Quo Vadis School of Nursing in Toronto.

Educational methods appropriate to mature students, counselling, hours of study and clinical duties meet the time schedules and ages of the students. Room and board are the private responsibility of trainees.

Entrance requirements are set down in law by the College of Nurses of Ontario. However, personality, experience and general aptitude are also taken into consideration. Tuition for the first year is $100 and $50 for the second year. Cost of uniforms and text books must be borne by the student.

The first group of approximately 30 students commenced studies in September 1964; it is planned to enrol a similar-sized group for September 1965.

Further information may be obtained by writing to:

Quo Vadis School of Nursing,
38 Sunnyside Avenue,
Toronto 3, Ontario.

Small Business Management Training

The extent of "know-how" in the operation of a small business can often determine the success or failure of an undertaking which in other respects would be ideally suited to the mature woman. Methods, merchandise, techniques and business operations vary widely from those familiar to her in earlier years.

The federal Department of Trade and Commerce estimates that small businesses account for 90 percent of all businesses in Canada. Of these 71,000 enterprises are owned and managed by women.

To assist the owner/managers of these small businesses to gain greater efficiency, the Department of Labour of Canada has recently established special training arrangements. This program was designed by specialists for people who must be proficient in many areas of operation. Included are courses in Management Accounting, Retailing, Marketing for Manufacturers, Purchasing and Bookkeeping.

..

Information about the operation of this program in your area may be obtained from the vocational education division of the provincial department of education.

Teacher Education for Adults

The Faculty of Education of the University of Alberta in Edmonton has recently established a special two-year teacher education program for adults with high school matriculation standing.

The course is designed for mature men and women between the ages of 30 and 50 who wish to obtain certification to teach in either the elementary or secondary schools of Alberta.

Of the 25 students accepted in the initial group which commenced studies in September 1964, 20 were women.

Further information may be obtained directly from the University.

Course in Welfare Services

In September, 1964 Ryerson Polytechnical Institute in Toronto introduced a new course, Welfare Services, to help alleviate the severe shortage of trained welfare workers in private and public agencies of Ontario. The course will prepare students for employment in every kind of welfare agency including services to the aged, families, children, juvenile and adult offenders, the handicapped and those in need of vocational counselling.

Applicants for admission must have successfully completed requirements for the Ontario Secondary School Graduation Diploma.

Banking

Difficulties in recruiting efficient staff to service the growing volume of banking business have promoted the personnel policy of encouraging "re-entry". Women who have left the bank for various reasons return to work after a period of several years, and are given special training courses. They may also take the Canadian Bankers' Association courses open to all bank employees through the Extension Department of Queen's University.

Training for Unemployed

The recently organized Quetico Conference and Training Centre, a resident school in the provincial park on Lake Superior, northwestern Ontario, established to meet the needs of unemployed persons, has announced a number of courses of training related to the tourist industry that thrives in that area:

..

Souvenir Craft Manufacturing--a course for men and women wishing to become established in the manufacturing of craft items which can be marketed as souvenirs. Ceramics, woodcraft and graphics are the three options in this course.

Tourist Resort Services Personnel Courses--training for dining room services, cashiering and related duties, care of cabin and rooms, supervision of children for guests and personal development.

The program, which is financed jointly by the Province of Ontario and the Government of Canada, is open to men and women over 16 years of age, who have been out of school for 12 months and are registered with the National Employment Service. Trainees receive allowances, depending on marital status, part of which is payable to the centre for board and lodging. Reimbursement of travel costs is also provided for.

Complete information is available from NES or

Quetico Conference and Training Centre,
Box 1000, Atikokan, Ontario.

These courses are typical of the training for unemployed persons under Program 5.

..

Directors of Vocational Education in Provincial Departments of Education

Director of Vocational Education,
Department of Education,
St. John's, Newfoundland.

Director of Vocational Education,
Department of Education,
Charlottetown, Prince Edward Island.

Director of Vocational Education,
Department of Education,
Box 1650,
Halifax, Nova Scotia.

Director of Vocational Education,
Department of Education,
Box 866,
Fredericton, New Brunswick.

Director General of Studies,
Department of Youth,
9175 St. Hubert Street,
Montreal 11, Quebec.

Superintendent, Technological and
Trade Training Branch,
Department of Education,
44 Eglinton Avenue East,
Toronto 12, Ontario.

Director of Vocational Education,
Department of Education,
141 Legislative Building,
Winnipeg 1, Manitoba.

Director of Vocational Education,
Department of Education,
Saskatchewan Book Bureau Building,
1150 Rose Street,
Regina, Saskatchewan.

Director of Vocational Education,
Department of Education,
727 Administration Building,
10820 - 98th Avenue,
Edmonton, Alberta.

Director of Technical and Vocational Education,
Department of Education,
Victoria, British Columbia.

VT 003 036
Adult Education -- Preparation for Employment.

Spitze, Hazel Taylor
Pub Date - 65
MF AVAILABLE IN VT-ERIC SET. 8p.

*OCCUPATIONAL HOME ECONOMICS, *ADULT VOCATIONAL EDUCATION, HOMEMAKING EDUCATION, SERVICE OCCUPATIONS, *HOME ECONOMICS SKILLS, NATIONAL SURVEYS,

Information on programs preparing adults for employment in home-economics related occupations came from 18 states and Puerto Rico. Because they believe preparation for employment is more than teaching a specific job skill, some educational institutions utilized courses in home management to prepare women for the dual role of homemaker and employee. Others separated vocational and family living preparation into two distinct facets of their program. Often programs designed to improve homemaking skills or provide avocational interests such as ceramics, furniture refinishing, custom tailoring, knitting, interior decoration, or cake decorating produced industrial workers or part-time employees who worked in the home to add to their income. The occupation training mentioned most often was for Homemaker Service in which the employee serves as a substitute for a homemaker who is ill or otherwise unable to perform her usual tasks. Other training being offered was for child-care aides, food service workers, institutional aides (hotel and motel housekeeping), nursing assistants, clothing alteration employees, and upholsterers. Two programs training for both homemaking and employment worked with mothers receiving Aid to Dependent Children and Public Aid. In some programs efforts were being made to dignify positions by adding titles, uniforms, certificates to show course preparation, and badges. A list of the occupations reported, persons and places from which the reports have come, and page numbers are included. This article is published in the "Illinois Teacher of Home Economics," Volume 8, Number 5. (F)

VT 003 036

VOL. VIII, No. 5

ED022065

ILLINOIS TEACHER
OF HOME ECONOMICS

ADULT EDUCATION: PREPARATION FOR EMPLOYMENT

Guide to Contents on pages 229-230

VT003036

HOME ECONOMICS EDUCATION · UNIVERSITY OF ILLINOIS

A publication of the Division of Home Economics Education,
Department of Vocational-Technical Education, College of
Education, University of Illinois, Urbana, Illinois 61803

Members of Division and Editorial Board:

Elizabeth Simpson, Professor and Division Chairman
Mary Mather, Associate Professor
Hazel Spitze, Assistant Professor
Ruth Whitmarsh, Teaching Assistant
Patricia Rotz, Research Assistant
Carol Hodgson, Research Assistant

Business Manager of Illinois Teacher of Home Economics: Mrs. Jean Payne

Vol. VIII, No. 5, 1964-65. Published six times each year.
Subscriptions $3 per year. Single copies 50 cents.

Address: Illinois Teacher of Home Economics
342 Education Building
University of Illinois
Urbana, Illinois 61803

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ADULT EDUCATION: PREPARATION FOR EMPLOYMENT

Hazel Taylor Spitze
University of Illinois

What is going on in adult education to prepare persons for employment in home economics-related occupations? In order to try to find an answer to this question, we sent queries to home economics and adult education leaders in every state asking for names of persons who are doing significant work to prepare adult students for employment. The response was most gratifying. Even those who had no names to suggest often replied with regret and expressed interest in finding out what others are doing.

To those persons who were suggested, we wrote personal letters requesting information about whatever type of program they were supervising, classes they were teaching, or other project they were developing. We received responses from eighteen states and Puerto Rico regarding a dozen or more different occupations. In this issue we shall attempt to share these responses. In some cases the contributions came as a paragraph in a letter or a mimeographed outline of a course; in others, a more formal report of a few pages was submitted. When several contributions were concerned with the same occupation, we have sometimes summarized to avoid excessive repetition.

To guide your reading we are including a list of the occupations reported, persons and places from which the reports have come, and page numbers.

Of course, preparation for employment may be something besides the teaching of a specific job skill. In this vein, Ellis reports her work in "Family Living for Public Aid Recipients" at Streator, Illinois (page 316), and Nickel describes a personal development course at Madison, Wisconsin (page 320). In a sense, all of our home management courses which help women to carry the double role of homemaker and employed person might classify as preparation for employment.

Some home economics educators believe that all preparation for employment must be carried on as a distinctly separate facet of their program rather than combined with preparation for improved family living. Others reject this idea and see the two as compatible or complementary. For example, we quote from a letter received from Susanne Macdonald and Edna E. Yotter:

> The Department of Home Economics of the St. Louis Public Schools has organized Home and Family study groups for adults in ceramics, clothing construction, custom tailoring, furniture refinishing, gourmet foods, knitting and art needle craft, millinery, interior decoration, slip cover and drapery making. These classes are

> designed to meet the educational needs of the adult community. In addition to serving the people who would generally profit from these subjects, the courses are to assist those who need job upgrading, homemaking skills or an opportunity to pursue an avocational interest.
>
> While our aim is not to prepare adults for employment, we have countless instances where our students have secured positions in industry; some are gainfully employed at home or have secured part-time work in alteration, clothing, tailoring and slip cover making.

Others, too, have mentioned that a few of their students in such classes as millinery, upholstering, clothing construction, special cookery, cake decorating, and handicrafts have become employed or have done part-time work in their homes to add to their income.

Gertrude Hendricks (Youngstown, Ohio) directs a dual-purpose program for ADC mothers in home management. The course is designed to help families to help themselves through better management practices and improved family relations, and some of the women have become employable as a result of this experience. Each course in the series meets for fifty-six hours during a fourteen-week period and includes principles regarding at least two of the following areas: nutrition and meal planning, clothing renovation, home furnishings, housekeeping, home equipment, and shopping.

The occupation most often mentioned in responses to our survey was Homemaker Service. A person in this rather new occupation is able to serve as a temporary substitute for a homemaker who is ill or otherwise unable to perform her usual tasks, or to assist a homemaker who is partially disabled. Programs to prepare such persons, variously called Visiting Homemakers, Professional Homemakers, Homemakers' Assistants, or just Homemakers, have been sponsored by private agencies (for example, Family Service), universities, public school adult education, and other groups. Each community has different resources that make different sponsorship feasible. The reports of several programs included in this issue show variation in the type of courses offered as well as in sponsorship.

Persons prepared for domestic service and/or baby sitting are greatly needed in our changing society in which so many homemakers are "moonlighting" with part-time or full-time jobs. In some quarters efforts are being made to dignify these positions with new titles (e.g., Home Manager's Assistant, Household Technician), special uniforms, certificates to show course preparation, and badges. Revised attitudes on the part of employers and increased wages can also contribute. As this type of service becomes more prestigious and more persons are willing to prepare for it, two problems may be alleviated--unemployment and the scarcity of help in this area.

One such program is reported by Irene Tice in the Employment Service Review, October 1964, under title "Home Management Training in Detroit." Three hundred seventy-one women have graduated in twenty-one classes since 1959, and the program has been evaluated and expanded. Other programs are reported in this issue by home economists in three states and Puerto Rico.

Several responses were in regard to programs to prepare assistants for professional workers in nursery schools and child-care centers. This occupation is usually referred to as Child-Care Aide. A related, but different, occupation is Foster Day-Care Parent, an example of which is reported from Seattle.

Many adult educators are concerned with preparing food service workers. Some such courses are extensive enough to be included in two-year programs of Junior Colleges or Technical Institutes. Included here are the less comprehensive ones which give some preparation to those employed or wishing to become employed as dietary aids, school lunch personnel, cooks in nursing homes, waitresses and the like. At Youngstown, Ohio, a 26-week Cook-Chef class is being taught under the Manpower Development Program. Information will be available from Mr. Joseph Hutta, Supervisor MDTA, Board of Education, Walnut and Wood Streets, Youngstown, Ohio, 44503.

Some other occupations were reported by one or two persons: institutional aide (hotel and motel housekeeping), nursing assistants, and clothing alteration. Information concerning an upholstery course which has some students interested in employment can be obtained from Frank Green, 606 Albert Avenue, Sunnyvale, California, who is the instructor and author of "Practical Upholstering," a series of booklets used in the course.

In some schools, home economists cooperate with other vocational divisions to prepare persons for employment. An example is the work of Mrs. Lois Rusch and Mrs. Irma Kyle who teach "Family Living" and "Normal Nutrition" to students at Neenah-Menasha (Wisconsin) Vocational School for Practical Nurses.

We are certain there are many other programs and additional occupations that ought to be included in such an issue, and we invite readers to inform us of such omissions. It is our hope that our attempt at sharing will aid those who, like us, are interested in employment education and who, also like us, did not know a great deal about what others are doing.

- -

GUIDE TO THE REPORTS

Occupation Discussed	Person Reporting	Address	Page
Homemaker Service	Gibbs and Dunlap	Terre Haute, Indiana	231
	Farone	Phoenix, Arizona	238
	Foster	Greensboro, North Carolina	246
	Murray	LaGrange, Georgia	249
	Cornelius	Ithaca, New York	256
	Bonar and Tompkins	Joliet, Illinois	258
	Burbidge	Salt Lake City, Utah	260
	Lovell	Baton Rouge, Louisiana	263
Domestic Service and/or Baby Sitting	Martinez	Hato Rey, Puerto Rico	265
	Kraft	Carbondale, Illinois	267
	Kimpland	Rochester, New York	275

GUIDE (Continued)

Occupation Discussed	Person Reporting	Address	Page
Child Care Aides	Hendricks	Youngstown, Ohio	277
	Crum	Seattle, Washington	288
	Murray	LaGrange, Georgia	293
	Grant	Chicago, Illinois	297
Food Service	Willis	Atlanta, Georgia	298
	Burbidge	Salt Lake City, Utah	299
	Schusky	Sheyboygan, Wisconsin	302
	Murray	LaGrange, Georgia	303
	Murphy	Concord, New Hampshire	306
	Vocational School	Manitowoc, Wisconsin	307
Institutional Aide	Turner	Little Rock, Arkansas	308
Nursing Assistant	Schusky	Sheyboygan, Wisconsin	310
	Vocational School	Manitowoc, Wisconsin	311
Clothing Alteration	Hutchinson	Ft. Lauderdale, Florida	313
General	Ellis	Streator, Illinois	316
	Nickel	Madison, Wisconsin	320

VT 003 226
Manpower Requirements in Indiana Hospitals.

Indiana Empl Secur Div, Indianapolis. Res and Stat Sect.
Pub Date - Jul67
MF AVAILABLE IN VT-ERIC SET. 13p.

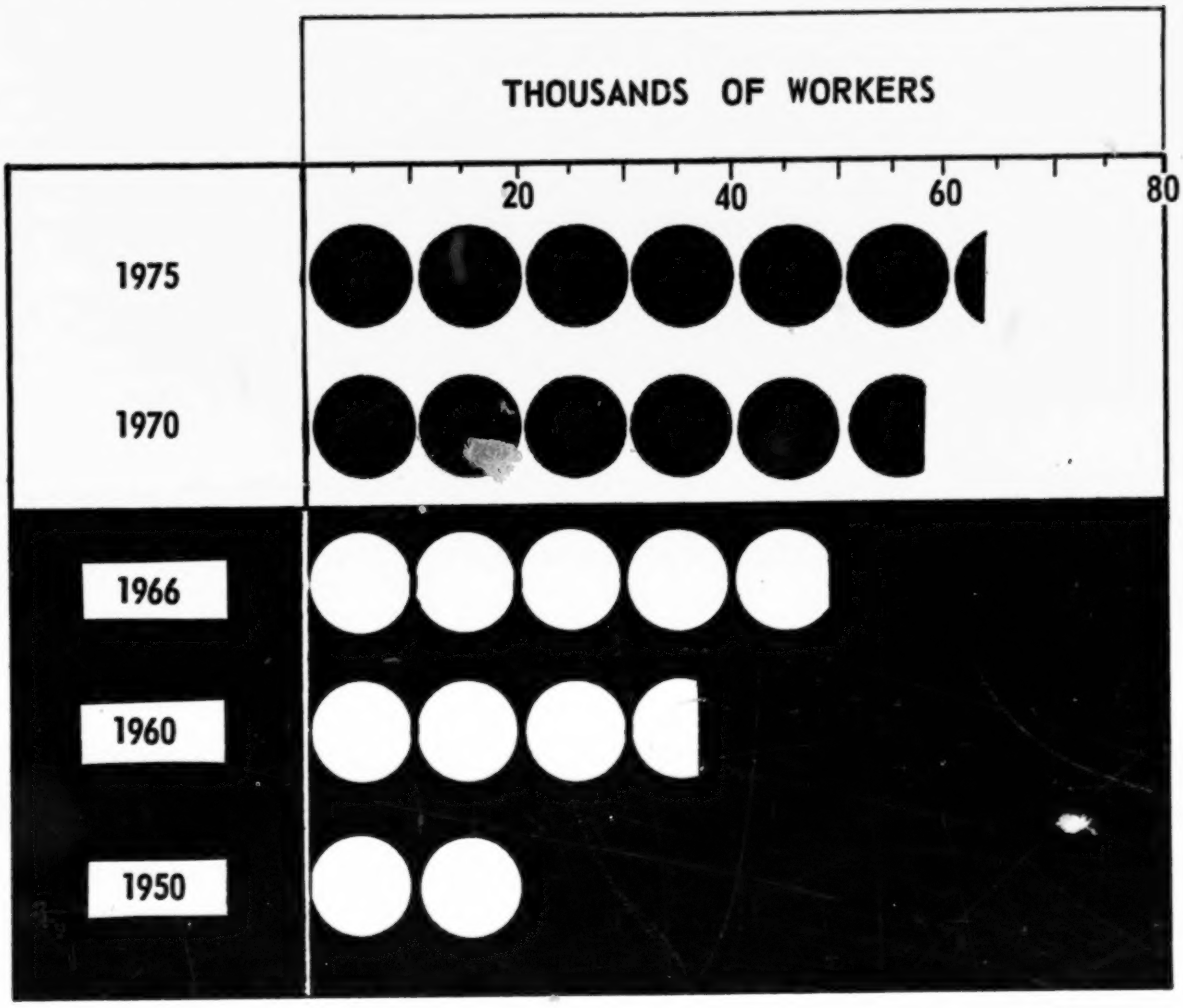
*EMPLOYMENT TRENDS, *EMPLOYMENT OPPORTUNITIES, *HOSPITALS, *HEALTH OCCUPATIONS, EMPLOYMENT STATISTICS,
Indiana,

The inventory and projection of occupational needs is based on--U.S. Census Bureau data for 1960, a 1966 survey conducted by the American Hospital Association and the Public Health Service, a study of hospital needs in the greater Indianapolis area, and Indiana Manpower Trends to 1965, by Martin Heller. In projecting needs, the following assumptions were made--(1) Economic conditions will permit staffing increases to allow for optimum patient care, (2) Hospital care needs will grow in direct relation to anticipated population growth, and (3) Occupational structure of hospital staffing patterns will remain stable. Projections indicate that (1) Total staff requirements will increase from the actual staffing figure of 49,084 in 1966 to 54,908 by the end of 1967, to 57,145 in 1970, and 61,490 in 1975, (2) 40,864 of the 61,490 jobs projected for 1975 will be professional or technical positions requiring some specialized training, (3) The greatest need will be for registered nurses, an increase from the actual staffing figure of 8,781 in 1966 to 11,866 in 1975, (4) Substantial increases will also be required for licensed practical nurses, the category of "aides, orderlies, and attendants," psychiatric aides, and medical technologists, and (5) In the nonprofessional group of occupations, food service workers and secretarial-clerical workers will be in considerable demand. (JK)

VT 003 226

En022065

MANPOWER REQUIREMENTS



IN INDIANA HOSPITALS

INDIANA EMPLOYMENT SECURITY DIVISION

VT003295

STATE OF INDIANA
ROGER D. BRANIGIN, GOVERNOR
Indiana Employment Security Division
Lewis F. Nicolini, Director

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

MANPOWER REQUIREMENTS

IN

INDIANA HOSPITALS

Research and Statistics Section
10 North Senate Avenue
Indianapolis, Indiana 46204

June 1967

ACKNOWLEDGMENTS

This report draws together data obtained from several sources to present an inventory and projection of occupational needs in Indiana hospitals. The occupational background material was provided by Mr. Hugh Asher of the Indiana Hospital Association who submitted data for Indiana from a survey which was conducted by the American Hospital Association and the Public Health Service. A report of the inventory of hospital occupational needs, nationwide, has already been published.

The Indianapolis Hospital Development Association also provided data from a more recent study of the hospital needs in the greater Indianapolis area. Mr. Forbes Polliard, Director, and Mr. Martin Reck, Analyst, submitted information helpful in augmenting the occupational data already received.

Population and employment statistics were excerpted from the Indiana Manpower Trends to 1975 written by Martin Heller, Labor Market Analyst in the Research and Statistics Section of Indiana Employment Security Division.

Historical data were derived from the U. S. Census Bureau's published reports for 1960.

INTRODUCTION

Employment in Indiana's hospitals experienced a tremendous growth during the decade of the 50's. According to the U. S. Bureau of Census figures, hospital employment advanced from a total of 19,650 in 1950 to 36,800 in 1960--an increase of 87 per cent.

Several factors contributed to this remarkable increase: a State population growth of 18.5 per cent during this period, increased coverage by individual and group insurance plans, additions of laboratories and special equipment by hospitals, and the availability of funds for building hospital facilities.

Since 1960, growth in hospital employment has continued, but at a slower pace; the increase since then to 1966 is around 12,000, or 33 per cent.

Hospital construction rose sharply during the period of the 50's; however, the needs are still in excess of the available resources in most areas of the State. In the Indianapolis area, where the problem is particularly acute, the Indianapolis Hospital Development Association is concentrating on a vast improvement program. The Indiana Hospital Association is making a statewide attempt to improve training facilities and to utilize fully the skills of those trained in the shortage occupations.

Much has already been accomplished and more plans are in the formulation stage. A major revamping of hospital procedures and facilities may result from these efforts to provide more adequate services to Indiana's ill and afflicted.

The employment needs to care for the institutionalized mentally ill and retarded of the State are probably understated in this report, due at least in part to the fact that no clear-cut standards for maximum care and treatment are set. Indiana's mental health programs have been handicapped by inadequate funding in the past; indications for the future appear somewhat brighter. Plans for comprehensive mental health centers in five central Indiana locations are now under way.

This study does not include employment in health service occupations outside the hospitals. Many more people are employed in medical laboratories, physicians' offices, nursing homes and rehabilitative care facilities. Others work in educational institutions and in private industry or are engaged in self-employment.

Employment in this nonhospital segment of health and medical services also expanded during the decade of the 50's but at a slower rate--33.9 per cent. Employment rose from a total of 15,600 in 1950 to 20,900 in 1960. Comparable statewide estimates are not available for the period since 1960. Studies show that the employment growth rate nationwide in these services has increased more sharply than that experienced by private hospitals during the years of 1958-1964. It is likely that Indiana has followed this upward trend.

HIGHLIGHTS

Manpower requirements in all types of hospitals in Indiana will increase substantially in the periods to 1970 and 1975. Some areas will grow more rapidly than others in population; therefore, needs will not be distributed evenly throughout the State, but will appear the most numerous in areas of the greatest concentration of population.

In April 1966, the surveyed hospitals reported a total of more than 2,600 budgeted vacancies and a need for a staff increase of around 3,100 people by the end of 1967 in order to provide optimum patient care.

By 1975, the total personnel needed to staff the hospitals will be increased by more than 6,500. Another 5,800 replacements for workers who retire, die or leave the area or the occupation will be required annually.

The professional and technical occupations in which the greatest numbers of additional people for expansion of facilities will be needed are the following:

- Professional Nurses
- Aides, Orderlies and Attendants
- Medical Technologists
- Licensed Practical Nurses
- Psychiatric Aides
- Radiologic Technologists

In the nonprofessional category, workers in food service, housekeeping and clerical jobs will be required in the greatest numbers.

Some responding administrators listed their five most urgent hospital manpower needs and the number currently needed in each occupation. Occupations most frequently mentioned were the following:

OCCUPATION	NUMBER URGENTLY NEEDED
Professional Nurses	765
Licensed Practical Nurses	230
Nurse Aides	170
Male Attendants and Orderlies	110
Registered Medical Technologists	59
X-Ray Technicians	32
Laboratory Technicians	18
Dietitians	16
Psychiatrists	15
Occupational Therapists	13
Medical Records Librarians	13
Surgical Technicians	13

Other urgent needs but in fewer numbers were in the occupations of Physician, Psychologist, Accountant, Director of Nursing Services, Anesthetist, Pharmacist, Social Worker, Pathologist, Recreational Therapist, Dental Hygienist, and Chemist for Cardiovascular Services. Mentioned also were the occupations of Dietary Workers, Skilled Maintenance Workers, and Secretarial-Clerical Workers in the nonprofessional category.

TABLE I

PERSONNEL NEEDS IN INDIANA HOSPITALS
1966-1967

CATEGORY OF PERSONNEL	TOTAL STAFF APRIL 1966	VACANCIES APRIL 1966	NEEDS FOR OPTIMUM CARE		ANNUAL REPLACE-MENTS	TOTAL NEEDS 1966-67
			ADDITIONS 1967	TOTAL STAFF 1967		
TOTAL	49,084	2,685	3,139	54,908	5,807	11,631
PROFESSIONAL NURSES	8,781	878	937	10,596	1,642	3,457
LICENSED PRACTICAL NURSES	2,355	349	411	3,115	667	1,427
AIDES, ORDERLIES & ATTENDANTS	9,435	446	554	10,435	1,576	2,576
PSYCHIATRIC AIDES	3,957	364	253	4,574	691	1,308
MEDICAL TECHNOLOGISTS	1,251	136	180	1,567	240	556
HISTOLOGIC TECHNOLOGISTS	51	1	2	54	2	5
RADIOLOGIC TECHNOLOGISTS	604	50	77	731	114	241
LABORATORY ASSISTANTS	387	23	37	447	32	92
MEDICAL RECORDS LIBRARIANS & TECHNICIANS	464	29	35	528	28	92
SURGICAL TECHNICIANS	361	35	35	431	20	90
DIETITIANS	240	41	25	306	9	75
FOOD SERVICE MANAGERS	156	18	7	181	8	33
CYTOTECHNOLOGISTS	29	1	4	34	1	6
ELECTROCARDIOGRAPH TECHNICIANS	103	8	8	119	3	19
ELECTROENCEPHALOGRAM TECHNICIANS	37	1	5	43	1	7
X-RAY ASSISTANTS	150	7	16	173	27	50
OCCUPATIONAL THERAPISTS	67	11	23	101	3	37
OCCUPATIONAL THERAPY ASSISTANTS	81	2	7	90	4	13
PHYSICAL THERAPISTS	127	23	25	175	5	53
PHYSICAL THERAPY ASSISTANTS	132	9	15	156	6	30
SPEECH PATHOLOGISTS & AUDIOLOGISTS	11	1	7	19	1	9
RECREATION THERAPISTS	158	10	41	209	6	57
INHALATION THERAPISTS	163	33	38	234	7	78
PHARMACISTS	227	28	15	270	8	51
PHARMACY ASSISTANTS	147	7	7	161	7	21
MEDICAL LIBRARIANS	66	8	12	86	2	22
SOCIAL WORKERS	218	31	70	319	9	110
SOCIAL WORKER ASSISTANTS	16	3	2	21	1	6
ALL OTHER PROFESSIONAL AND TECHNICAL OCCUPATIONS	1,085	131	98	1,314	37	266
TOTAL, PROFESSIONAL & TECHNICAL	30,859	2,684	2,946	36,489	5,157	10,787
FOOD SERVICE WORKERS	5,000	0	33	5,033	191	224
LAUNDRY WORKERS	1,632	0	6	1,638	62	68
HOUSEKEEPING WORKERS	3,041	0	57	3,098	118	175
MAINTENANCE WORKERS	2,539	0	46	2,585	52	98
MANAGEMENT	858	1	6	865	24	31
SECRETARIAL-CLERICAL	5,155	0	45	5,200	203	248
TOTAL NONPROFESSIONAL	18,225	1	193	18,419	650	844

SHORT-TERM NEEDS, 1966-1967

A total of more than 11,600 additional people trained in various occupations will be needed by Indiana hospitals from April 1966 to the end of 1967. This includes current vacancies, added staff to give optimum patient care and the replacements needed in 1967 to fill openings left by employees who retire, die, or leave the labor force.

Provided that the hospitals were able to fill their 1966 vacancies for 2,600 people, they would still need 3,100 additions to the staff by the end of 1967 in order to give optimum patient care. In one year, the total staff should be increased from 49,000 in 1966 to around 54,900 -- a growth approaching 12 per cent, including both the current vacancies to be filled and the additions needed for optimum patient care. If all the budgeted vacancies were filled in 1966, they would still require a 6 per cent increase to give the desired kind of care by the end of 1967.

Of the more than 2,600 vacancies in Indiana hospitals in April 1966, nearly one-third were openings for professional nurses. Nearly 13 per cent of the total were openings for licensed practical nurses, over 16 per cent were for aides, orderlies and attendants and 14 per cent were for psychiatric aides. The largest numbers of additions needed to give optimum patient care were also in these occupations. Other significant increases in relation to the numbers employed were in the occupations of medical technologists, radiologic technologists, dietitians, inhalation therapists, and social workers.

By the end of 1967, the hospitals will need to find an additional 1,800 professional nurses to fill budgeted vacancies and added needs, over and above those who will leave the profession during that year. Another 1,600 will be required annually to replace those who are expected to retire, die or leave the profession. They will need to train 1,400 more licensed practical nurses, 2,600 aides, orderlies and attendants and more than 550 medical technologists to fill expected openings. Psychiatric aide requirements will total slightly more than 1,300.

Of the nonprofessional group, the housekeeping occupations showed the greatest number of added needs, although substantial increases were also reported in the food service, maintenance and clerical worker categories. Annual replacements in the nonprofessional grouping will require another 650 workers; nearly one-third of these will be needed to replace those who leave clerical positions.

TABLE II

ANTICIPATED PERSONNEL NEEDS IN INDIANA HOSPITALS
1967, 1970 and 1975

	STAFF NEEDED FOR OPTIMUM PATIENT CARE				
				CHANGE FROM	
CATEGORY OF PERSONNEL	1967	1970	1975	1967-1970	1970-1975
TOTAL	54,908	57,145	61,490	2,237	4,345
PROFESSIONAL NURSES	10,596	11,028	11,866	432	838
LICENSED PRACTICAL NURSES	3,115	3,242	3,488	127	246
AIDES, ORDERLIES & ATTENDANTS	10,435	10,860	11,686	425	826
PSYCHIATRIC AIDES	4,574	4,760	5,122	186	362
MEDICAL TECHNOLOGISTS	1,567	1,631	1,755	64	124
HISTOLOGIC TECHNOLOGISTS	54	56	60	2	4
RADIOLOGIC TECHNOLOGISTS	731	761	818	30	57
LABORATORY ASSISTANTS	447	465	501	18	36
MEDICAL RECORDS LIBRARIANS & TECHNICIANS	528	550	592	22	42
SURGICAL TECHNICIANS	431	449	483	18	34
DIETITIANS	306	318	342	12	24
FOOD SERVICE MANAGERS	181	189	203	8	14
CYTOTECHNOLOGISTS	34	35	38	1	3
ELECTROCARDIOGRAPH TECHNICIANS	119	124	133	5	9
ELECTROENCEPHALOGRAM TECHNICIANS	43	45	48	2	3
X-RAY ASSISTANTS	173	180	194	7	14
OCCUPATIONAL THERAPISTS	101	105	113	4	8
OCCUPATIONAL THERAPY ASSISTANTS	90	94	101	4	7
PHYSICAL THERAPISTS	175	182	196	7	14
PHYSICAL THERAPY ASSISTANTS	156	162	175	6	13
SPEECH PATHOLOGISTS & AUDIOLOGISTS	19	20	22	1	2
RECREATION THERAPISTS	209	218	234	9	16
INHALATION THERAPISTS	234	243	262	9	19
PHARMACISTS	270	281	303	11	22
PHARMACY ASSISTANTS	161	167	180	6	13
MEDICAL LIBRARIANS	86	90	97	4	7
SOCIAL WORKERS	319	332	357	13	25
SOCIAL WORKER ASSISTANTS	21	22	23	1	1
ALL OTHER PROFESSIONAL AND TECHNICAL OCCUPATIONS	1,314	1,367	1,472	53	105
TOTAL, PROFESSIONAL & TECHNICAL	36,489	37,976	40,864	1,487	2,888
FOOD SERVICE WORKERS	5,033	5,238	5,637	205	399
LAUNDRY WORKERS	1,638	1,705	1,834	67	129
HOUSEKEEPING WORKERS	3,098	3,224	3,469	126	245
MAINTENANCE WORKERS	2,585	2,690	2,895	105	205
MANAGEMENT	865	900	968	35	68
SECRETARIAL-CLERICAL	5,200	5,412	5,823	212	411
TOTAL NONPROFESSIONAL	18,419	19,169	20,626	750	1,457

NEEDS PROJECTED TO 1970 AND 1975

More than 57,000 people will be needed to staff Indiana hospitals in 1970. An increase of 2,200 people is indicated between 1967 and 1970 assuming budgeted vacancies and optimum care needs are filled by 1967. Another 5,800 will be needed annually to replace workers who die, retire or leave the labor force.

Nearly 38,000 of the jobs will be professional or technical positions requiring some specialized training. More than 400 new positions for nurses will develop in addition to the more than 1,600 needed annually for replacements. Aides, orderlies and attendants will also grow by 400, while replacements will require an additional 1,500 annually. Nearly 200 additional licensed practical nurses will be added to the staff.

In the nonprofessional group of occupations, food service workers and secretarial-clerical workers will each grow by 200. Another 200 each will be needed each year to replace workers who leave the labor force.

Total staff requirements by 1975 will rise to 61,500. About 4,300 additions will be needed in the five-year period (1970-1975), with the largest numbers of people again added to the professions of nurses and aides, orderlies and attendants. Besides the more than 800 of each to be added in these occupational categories, substantial increases will be required for licensed practical nurses, psychiatric aides, and medical technologists. These additions are over and above the 1966 budgeted vacancies and the additions required to give optimum patient care by the end of 1967.

These estimates are undoubtedly conservative since a constant ratio was applied to population growth in 1970 and 1975 to make estimates of future growth. The base used was the total needed for optimum patient care by the end of 1967. Actually, hospital employment has accelerated faster than the population growth in the past. Indiana's population grew at a rate of 18.5 per cent between 1950 and 1960, according to the U. S. Census, while hospital employment increased by 87 per cent. From 1960 to 1966, population increased by less than 6 per cent, while hospital employment increased by 33 per cent.

METHODOLOGY

Survey forms were mailed to all private and public member hospitals by the American Hospital Association in April 1966. The questionnaires requested information by occupation on current employment, current vacancies, and additional personnel needed for optimum patient care presently and by the end of 1967. The survey responses were submitted to the Research and Statistics Section of the Indiana Employment Security Division by the Indiana Hospital Association for compilation and analysis of results on a statewide basis.

Responses were tallied by occupation and the data inflated to the universe. Projections of needs were made on the basis of anticipated expansion in the State's population using estimated totals from the Indiana Manpower Trends to 1975.

In making projections of total employment needs by occupation, the following assumptions were made:

1. Economic conditions will permit addition of hospital personnel sufficient to allow for the provision of optimum patient care.

2. Needs for hospital care will grow in direct relation to the rate of anticipated population growth to 1970 and 1975.

3. Occupational structure of hospital staffing patterns will remain stable, proportionate to present needs for giving optimum patient care.

The projections of occupational needs are based on the employers' estimates of staff needed to give optimum patient care in 1967 projected to 1970 and 1975 at a constant ratio to population. Estimated annual replacement rates were computed from data from various sources, including that provided by the Indianapolis Hospital Development Association. These projected employment figures tend to be somewhat conservative; hospital employment has actually been growing at a faster rate than population since the 1950's.

The following factors which might effect employment changes should be considered in reviewing the data:

1. Continuing acute shortages of professional nurses could force hospital administrators to re-allocate more of the job duties to lesser trained personnel. New jobs such as Ward Manager or similar occupations may be created or expanded to take over some of the duties of those occupations in short supply.

2. Technological changes resulting from scientific breakthrough on the treatment or cure of major diseases which now require extended hospital stays could alter the staffing patterns of the major hospitals. New techniques such as heart implantation could create new occupations. Such changes, although dramatic in a medical sense, usually bring about occupational changes slowly in terms of numbers of employed people.

3. Accelerated building of nursing homes offering more comprehensive medical treatment and rehabilitative services could lessen the need for extended hospital care. Employment in health occupations in medical and health services other than in hospitals could increase even more rapidly than in the past.

4. Dramatic increases in the rate of building much-needed additions to hospital facilities in the State could cause a rapid acceleration in employment needs.

VT 003 431 ED 014 020

A Study of the Registered Apprenticeship Program in Wisconsin.

Rajan, G. Soundara
Wisconsin Univ., Madison. Ctr for Stud in Voc Tech Ed.

Pub Date - 66
MF AVAILABLE IN VT-ERIC SET. 300p.

*APPRENTICESHIPS, *VOCATIONAL EDUCATION, TECHNICAL EDUCATION, ADULT VOCATIONAL EDUCATION, PROGRAM IMPROVEMENT, *SKILLED OCCUPATIONS, LABOR UNIONS, SURVEYS, STUDENT ATTITUDES, EMPLOYER ATTITUDES, STATE LAWS, DROPOUT ATTITUDES, EMPLOYERS, VOCATIONAL SCHOOLS, ADVISORY COMMITTEES, GOVERNMENT ROLE,
Wisconsin,

In the apprenticeship program started in 1911 new registrations rose steadily until 1925 and thereafter declined. From 1934 to 1946, the trend was again upward, but since then, new registrations have shown an overall decline. To elicit opinions about the program in general and its recent decline in particular, questionnaires were sent to 720 current apprentices, 269 apprentice program dropouts, and 457 employers in building, metal, and miscellaneous trades in 6 cities. Apprentices suggested improvement in related instruction and shop training, higher wages and lower union dues, better relations with particiating agencies, and shorter apprenticeships. The major reason given by dropouts for noncompletion were dissatisfaction with the work and working conditions, employer bankruptcy and layoff, and low wages, The employers' reasons for not training more apprentices centered around business conditions, such as automation and lack of facilities, journeyman-apprentice ratio restrictions of the unions, and high costs. Some recommendations were for more effective functioning of the Apprentice Division field supervisor, standards for government work contracts and tax rebates related to apprentice training, more responsible functioning of joint apprenticeship committees, cooperative activity to protect against layoffs and apprenticeship cancellation due to business liquidation, loan funds available to to aprentices, a study of apprentice wages, the opportunity for freer expression of apprentice views, preapprentice training, a study of lengths of training periods, and a broader functioning of the Apprenticeship Division in terms of training provisions and research. This document is available for $2.00 from The Center for Studies in Vocational and Technical Education, Social Science Building, University of Wisconsin, 1180 Observatory Drive, Madison, Wisconsin 53706. (JK)

ED022065

A STUDY OF THE REGISTERED APPRENTICESHIP PROGRAM IN WISCONSIN

G. Soundara Rajan

Center for Studies in
Vocational and Technical Education
Industrial Relations Research Institute
THE UNIVERSITY OF WISCONSIN
1966

VT003431

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

A STUDY OF THE REGISTERED APPRENTICESHIP PROGRAM IN WISCONSIN

G. Soundara Rajan

Center for Studies in
Vocational and Technical Education
Industrial Relations Research Institute
THE UNIVERSITY OF WISCONSIN
1966

THE CENTER FOR STUDIES IN VOCATIONAL AND TECHNICAL EDUCATION

was established in 1964 under a five-year grant from the Ford Foundation. It is recognized as a principal national unit for reference, research, and study in the field of occupational preparation.

J. Kenneth Little and Gerald G. Somers, Co-Directors

THE INDUSTRIAL RELATIONS RESEARCH INSTITUTE

came into existence in 1947 for the purpose of furthering cooperation among people engaged in industrial relations teaching and research in various departments of The University of Wisconsin.

Gerald G. Somers, Director
Alan C. Filley, Associate Director

Copyright 1966 by the Regents of The University of Wisconsin

Reproduction in whole or in part permitted for any purpose of the United States Government. It is otherwise prohibited without permission from the Center for Studies in Vocational and Technical Education, The University of Wisconsin.

To

Dr. V. Anantaraman

and

Vathsala

ACKNOWLEDGEMENTS

This thesis would not have been possible without the help of many individuals and institutions; I take this opportunity to convey my thanks to all of them.

The study owes its inception to a suggestion made by Professor Jack Barbash of the Deprtment of Economics. As my advisor and major professor, he provided all the stimulation and encouragement a student could hope for and showed an unfailing interest in seeing that it was completed. I remain indebted to him for all the help he gave.

I am also extremely grateful to Dr. Gerald G. Somers, director of the Industrial Relations Research Institute, whose assistance in many ways enabled me to put this thesis in its final form.

I would also like to express my sense of gratitude to the following professors, whose help on more than one occasion assisted me in completing my work at the University of Wisconsin: Dr. Reed L. Tripp, former director of the Institute; Dr. David B. Johnson, chairman of the Department of Economics; Dr. Harold M. Groves, Department of Economics; Dr. Alan C. Filley, the School of Commerce; and Dr. Karl U. Smith, Department of Pyschology.

Further, I wish to convey my appreciation to the following individuals, organizations, and institutions, whose contributions to this study are recalled with gratitude: Mr. Charles T. Nye, director of the Apprenticeship Division of the Industrial Commission of Wisconsin; Mr. Harold M. Arpin and other members of the staff of the Apprenticeship Division; Mr. George M. Kinsler of the State Board of Vocational and Industrial Education; Mr. Anthony T. Karpowitch, Apprenticeship Coordinator at the School for Vocational and Adult Education in Milwaukee; the directors of and the apprentice instructors of the vocational schools throughout the State, and especially at the schools in Appleton, Green Bay, Kenosha, Oshkosh, and Racine; Mr. George M. Hall, secretary of the Wisconsin State AFL-CIO; Mr. Marvin Brickson, secretary of the Madison AFL-CIO; the staffs in the State Historical Society, the Memorial Library of the University, and the Legislative Reference Library at the State Capital; the staff in the Survey Research Laboratory of the University; and the staff of the Industrial Relations Research Institute of the University.

I wish to also thank Mrs. Georgianna March, who edited the thesis and helped to put it in its final form, Miss Judith Cohen, who typed it, and Mrs. Gladys Rowe, who greatly facilitated production of the final draft.

However, with all due credit for the help I received from those mentioned above, there would still be no thesis without the assistance

I received through the Fulbright travel grant offered me by the Department of State of the United States Government. My thanks are also extended to the people of the United States Educational Foundation in India, and to the Office of Manpower, Automation, and Training of the U.S. Department of Labor for partial financial support.

Finally, I convey my appreciation and gratitude to my former professor in India, Dr. V. Anantaraman, whose initiative and help enabled me to travel to the United States and pursue my studies at the University of Wisconsin.

G. Soundara Rajan

Madison
August 1965

FOREWORD

The State of Wisconsin pioneered in registered apprenticeship programs when it enacted the Comprehensive Apprenticeship Law of 1911. Until now, however, there has not been any comprehensive account of the Wisconsin program.[1] The present thesis is an attempt to fulfill this need.

Part I contains some relevant materials on the institutions that participate in Wisconsin's apprenticeship program; it is primarily descriptive and historical and serves as a background for Parts II and III.

Part II examines apprenticeship transactions in Wisconsin: new registrations, completions of training, and cancellations by apprentices who drop out of the program. They are analyzed by trades and occupations and by periods. This data, then is used to evaluate the role of apprenticeship as a labor market device.

Part III gives the findings of surveys conducted among a selection of apprentices currently in the program in 1964, of former apprentices who had left the program without completing their training between 1958 and 1963, and of employers who were participating in the program in 1964. The objective of the surveys was to determine the opinions of each of these three groups regarding the Wisconsin apprenticeship program.

The final chapter presents an evaluation of Wisconsin's apprenticeship program and recommendations for its improvement.

Footnote to Forword

1. There were two unpublished theses on Wisconsin apprenticeship, a bachelor's thesis in 1925, and a master's thesis in 1931; both were submitted to the University of Wisconsin, Madison.

TABLE OF CONTENTS

		Page
Acknowledgements		vi
Foreword		vii

Part I. The Wisconsin Apprenticeship Program and Participating Institutions

1.	Introduction	1
2.	The Legal Basis for Apprenticeship in Wisconsin	25
3.	The Mechanics of Apprentice Training in Wisconsin	54
4.	The Role of Unions	70
5.	The Role of Employers	85
6.	The Role of Joint Apprenticeship Committees	97
7.	The Role of Vocational Schools	109
8.	The Role of the State	117

Part II. An Analysis of Apprenticeship Transactions

9.	The Building Trades	128
10.	The Metal Trades	136
11.	The Miscellaneous Trades	142
12.	The Current Position of the Apprenticeship Program	147
13.	Apprenticeship as a Labor Market Device	155

Page

Part III. A Survey of Participation in Wisconsin's Apprenticeship Program

14. The Survey and Its Limitations 161
15. The Views of Current Apprentices 163
16. The Views of Apprenticeship Drop-Outs 180
17. The Views of Employers 199
18. Conclusions and Recommendations 215

Appendix Tables 231
Questionnaires--Current Apprentices, Apprenticeship Drop-Outs, and Employers 278
Selected Bibliography 284

PART I. THE WISCONSIN APPRENTICESHIP PROGRAM AND THE PARTICIPATING INSTITUTIONS

CHAPTER 1

INTRODUCTION

A Brief History[1]

Apprenticeship is said to be as old as recorded civilization. We know that as a form of education it is at least 4,000 years old, for even then it was subject to state control. The code of Hammurabi regulated it. The writings of Plato and Xenophon, the great historian who lived in the fourth century B.C., mentioned apprenticeship. In Egypt it was practiced as early as the first century B.C. As a method of learning by doing, over an extended period of time, it seems to have existed in one form or another since the beginning of recorded history.

During medieval times, the guilds took an interest in apprenticeship and made regulations governing it. The first indication of government involvement was the enactment in 1563, in the United Kingdom, of a public law known as the Statute of Laborers and Apprentices. It regulated apprenticeship duration; codified existing customs and procedures; introduced the use of written indenture; permitted only responsible households to take apprentices, in order to protect their rights; made apprenticeship open to townspeople, excluding country folk; and gave public authorities the right to indenture pauper's children as apprentices. From that time on, government participated in apprenticeship in one way or another.

Apprenticeship in early colonial America resembled that in the United Kingdom. It was used as a measure of poor relief, a method of education, a penalty for idleness, or a punishment for debt. It was also used to educate the poor who could not afford a better education. During this period, most apprenticeship existed in the North, the industrial section of the country. In the South, apprentices were little more than indentured servants.

Although most apprentices were indentured, the period of time they served ran from one year to twenty, and duties quite unrelated to their apprenticeship were often required of them.

With the industrial revolution the guilds began to decline, as did their power over apprenticeship, and apprentices were without protection. There were public laws concerned with apprenticeship, but few were actually enforced. Youngsters were used as cheap labor under the guise of apprenticeship, and they taught just one or two rather than all the aspects of their trade. After completion of training, they were discharged if they asked for journeyman wage rates. Meanwhile, employers who had no journeymen hired apprentices. There were no agencies to question these practices.

These unsatisfactory conditions forced labor unions to undertake a long and continuous struggle to bring about some regulation of apprenticeship, beginning around the middle of the nineteenth century. And in the early part of the twentieth century, the various states began to enact laws regulating apprenticeship. Illinois, Massachusetts, New York, and Wisconsin were the early leaders in this type of legislation. The laws passed by Wisconsin in 1911 and 1915 differed from the laws in other states, however, in that they were detailed and spelled out the duties of employers and apprentice, thereby bringing uniformity to apprenticeship training in the State.

What is an Apprentice?

The word "apprentice" is derived from the French apprendre--"to learn." Webster's New International Dictionary (2nd ed.) defines it as:

> "...one who is bound by indentures or by legal agreement to serve another person for a certain time with a view to learning an art or trade in consideration of instruction therein and formerly usually of maintenance by the master...Hence one who is learning (emphasis supplied), especially by practical experience under skilled workers and often without pay, an art, trade or calling."

Thus, an apprentice is one who is taught a trade; in short, he is a learner, not a worker. Yet, since apprenticeship is based on "practical experience" under skilled workers, it denotes also a period of employment which forms the basis for "practical training." During this time the apprentice receives compensation for his services partly in the form of wages and partly through instruction in the particular trade, craft, or business he is studying.

Before the enactment of the apprenticeship laws in the State of

Wisconsin, "apprentice" was used to designate those orphans and incorrigible or homeless children who were taken care of by kind-hearted individuals who agreed by contract to furnish the necessary food, lodging, clothing, and a certain amount of schooling to them, and any person so bound out was known as an apprentice. "Apprenticeship" meant a form of poor relief, while "apprentice" meant a hapless child.[2]

In the early days of America, apprenticeship also meant the services rendered by those involuntary apprentices sent over from England to answer the demand for cheap labor. "It was nothing but a form of peonage."[3] Nonetheless, it also included the utilization of those voluntary apprentices who actually learned useful trades from skilled workers. With the establishment of State institutions for the care of orphans and homeless children, and with the enactment of the 1878 apprenticeship law, however, "apprentice" came to denote only voluntary apprentices.

Despite the fact that an apprentice is considered to be essentially a learner, there still seems to be a good deal of ambiguity in the general interpretation of the word. To some people, an apprentice is a skilled worker in the making; they view apprenticeship as a form of employment. For example, Stewart M. Scrimshaw, former Supervisor of Apprenticeship in the State of Wisconsin, says: "Apprenticeship is that character of employment in which the employee receives his remuneration substantially in two forms, viz., (1) money and (2) training and opportunity."[4]

To others, an apprentice is essentially a learner, and apprenticeship is essentially an educational process. This point of view is expressed by Paul Bergevin, who writes, "apprenticeship is a highly specialized type of education of its own. As an educational process, in one form or another, it has been in use throughout man's recorded history. It is one of the three ways to learn a skill."[5]

Another viewpoint, which takes into account both the educational and the employment aspects of apprenticeship, is propounded by Paul H. Douglas, an early writer on the subject: "apprenticeship is essentially a combination of education and industry. It is a process of learning by doing..."[6] Here, the educational aspects are of primary importance, while the fact of employment, although recognized, is noted only because it helps the process of learning.

In more recent years, however, stress has been placed on the employment aspect of apprenticeship, especially by those who are responsible for the administration of State-regulated apprenticeship programs. For example, R.C. Siciliano, former Assistant Secretary of Labor, states:

> 1. The apprentice is an employed worker (emphasis supplied); 2. The apprentice is a member of the labor force; 3. He is primarily a worker in learning status; 4. Apprenticeship is learning by doing; 5. Apprenticeship is learning while earning; 6. The apprentice is a learner...but he is not primarily a scholar...The main location of his learning is on the job; 7. Apprenticeship is learning while growing...; 8. Apprenticeship is traditionally aimed at the training of youth. Owing to our recent concentration on the job needs of veterans we have justifiably tended for a while to deviate from this tradition, but we are gradually returning to it. And that is as it should be. It is learning when one is at the impressionable age."[7]

Here, although the learning aspect of apprenticeship is considered, it is his status as an employed worker which is stressed; he is categorically a member of the labor force, primarily a worker who is learning.

This point of view is also shared by Edward E. Goshen, Director of the Bureau of Apprenticeship and Training of the United States Department of Labor, who writes:

> In the United States, the apprentice is not a student. He is an employed worker. He learns on the job. He produces during his training and he is paid and his production is sold. The apprentice is given instruction and experience both on and off the job in all the practical and theoretical aspects of the work in a skilled trade. As he progresses in this training, he aquires new skills and masters the application of those already learned. That is why he can be productive during his entire period of apprenticeship.[8]

Once this definition is agreed upon, it becomes necessary to show the employer that the apprentice--as a worker--is not a financial burden on him; hence the emphasis upon his productiveness.

The dual nature of apprenticeship is inevitable--it is part of the system of education and part of the economic system.[9] The interests of education and production may often collide in the process, and a harmonious blending of these two would benefit both the employer and the apprentice.

Also, a clearer statement of the status of apprentices might help to attract and hold youths to the apprentice training program. If they are considered to be primarily workers, then they must know this and must be given all the rights and privileges of modern industrial workers. If they are held to be primarily learners, then they must be told this and must recognize the responsibilities that go with their student status. Since the essence of apprenticeship is stated to be "the contractual relationship between the boy and the master, involving an exchange of work for education,"[10] it is perhaps more meaningful to treat the apprentice as a learner instead of a worker. Then the essentials of learning and training assume great importance.

A Sound Apprenticeship Training Program

The success or failure of the apprentice training program depends to a large extent upon the individuals who aspire to become apprentices. Thus, a scientifically tested method of selecting candidates is one of the fundamentals of a sound training program, since it should prevent excessively large numbers of drop-outs. It is also of great importance in a society where skilled journeymen may move upward in the industrial hierchy. An individual of ordinary intelligence can become a good mechanic with proper training, but a brighter candidate might be a "deep thinker who may develop into a foreman or a higher grade mechanic."[11]

The selection procedure should determine whether the candidate is physically and mentally fit and whether he possesses an aptitude for the occupation he has chosen and a willingness to do his part. A disregard for race, creed, or national origin is also an important element of a sound selection method, as it will increase the scope for choice among the candidates.[12] The age of the candidate is another necessary criterion--if he is too young, he may be mentally and physically unprepared to face the responsibilities of his work. In Wisconsin, setting the applicant's minimum age at sixteen also helps to insure that he will complete his high school education. However, there is no maximum in Wisconsin, except in some occupations which have maximums set by the unions.[13]

The special characteristics of the candidate's chosen occupation, as well as of the shop in which he will receive his training, must be considered in setting up a well planned shop-training program, another basic element of an effective apprenticeship program.[14] Here, work schedules are particularly important--the apprentice should be allowed neither to remain too long at a task he likes, nor to skip jobs he dislikes. Shop training is the only way an apprentice can acquire work experience; it has no substitute. "The experience..in doing a piece of work constructively and by repetitive operations skillfully, and by years of practice, artfully, is highly important to an apprenticeship program."[15]

The provision of related instruction constitutes the most important fundamental of a good training program.[16] Even though apprenticeship programs did not provide it a century ago, instruction in the technical subjects related to the apprentice's trade is recognized as a "must" today and is made compulsory. Every apprentice must receive related instruction for at least a certain minimum number of hours annually,[17] throughout his entire training period.

A periodic evaluation of the apprentice's performance both in shop training and in related instruction, together with maintenance of the appropriate records, would prove helpful not only to the apprentice, but also to those who plan shop training and related instruction.

If at all possible, apprentices indentured in similar occupations should receive as uniform a training as possible. Variations in detail may be recognized, but all apprentices must receive instruction and shop training in the basic elements and principles pertaining to the occupation. In fact, this is sometimes considered the crucial criterion of the best apprenticeship program.[18]

The length of training constitutes another important element of the program. Too short a period may result in inadequately trained journeymen, while an unreasonably long training program may discourage aspiring young men from becoming apprentices, as well as prospective employers from hiring more trainees. Here, the prime consideration should be the provision of reasonably adequate work experience and of incentives to the apprentice to stay in the program. A high percentage of drop-outs may have adverse effects on employers, youths, parents--all those who would otherwise be interested in apprenticeship.

Among other incentives, an apprenticeship program must be able to guarantee continuous employment for the duration of the apprentice's training, not only for financial reasons, but as an assurance of uninterrupted shop training. It should also provide a "progressively increasing schedule of wages,"[19] since poor wages are often cited as a cause of excessively high drop-out rates. In addition, reasonably good working conditions encourage the apprentice to stay and complete his training.

Another important incentive is the recognition given to the apprentice who remains for the full period of the program and completes his training. Such rewards--usually in the form of cash awards and diplomas--will be returned to the employer and the larger society in manifold ways.[20]

Finally, apprenticeship programs will be effective only if they have the sincere support of the employer. Even if a shop's training schedule is theoretically sound, it will serve no useful purpose if the top executives and foremen of the plant have no interest in executing it. If management is not interested, then the men in charge of training the apprentices may not show much interest. And journeyman sympathy and cooperation is of great importance, as the lack of it can do much harm to an otherwise sound program.[21]

The Objectives of Apprenticeship

In the view of labor, the over-all objective of the apprenticeship program is "to maintain and improve the skilled labor force."[22] This is to be achieved through the encouragement and promotion of the training of apprentices under standards that will safeguard the welfare of labor.

The maintenance and improvement of labor force skills are an important element of industrial society. Raw materials, machinery and tools, and manpower are indices of the industrial strength of a nation. However, raw manpower is a burden; it can transform itself into a component of industrial power only if it becomes skilled manpower.

Skill depletion may become an obstacle to an economy's growth. The loss of older workers through death, retirement, or disability can mean the loss of their skills, as well; "...if the skills are not to be lost, the training must be done well."[23]

Incompetent workmen are a liability to any trade, to the economy in general, and to the consumer in particular. It is to every trade's interest to promote good workmanship. Below average workmen can become journeymen of high quality with training.[24]

Moreover, the decline in the number of skilled workers in the trades and the growth of new industries across the nation call for new knowledge and new skills. The United States Department of Labor estimates that each year 2,000,000 newly trained skilled workers are needed,[25] but only a small number of men attain journeyman status every year.

Thus, the objectives of any training program are to turn unskilled into skilled manpower, skill replacement, skill improvement, and to accelerate the creation of new skills. Indentured apprenticeship training programs are not the only way to accomplish these goals; there are other methods, such as on-the-job training. But indentured apprenticeship is the most desirable, because it develops workers who possess not only the "know-how" but the "know-why" of their occupations.[26]

Apprentice training helps to fulfill the demand for a steady flow of skilled workers capable of adjusting to the ever-changing demands of a dynamic society. Thus, apprenticeship helps to meet not only the present but also the future demand for skilled workers. "Apprenticeship is the formal system of training by which young men are developed into all round craftsmen. It is a program, the ultimate objective of which lies in the future."[27]

Registered Apprenticeship Programs

The Bureau of Apprenticeship and Training of the United States Department of Labor has classified the different kinds of registered apprenticeship systems in the United States into four categories: (1) joint systems, "in which both labor and management participate in the establishment of the terms and conditions under which apprentices may be trained and employed;" (2) "not joint" systems, established either by labor or by management alone; (3) group systems, in which two or more employers subscribe to the same set of basic standards; and (4) individual systems, which cover a single establishment.[28] The Wisconsin apprenticeship program is a joint group registered system. Both labor and management participate in the establishment of the terms and conditions under which apprentices may be trained and employed, and all employers follow the same set of basic standards.

The advantages of a registered apprentice training program are many. It develops, maintains, and improves the skills of craftsmen and helps to meet society's future need for skilled men.

Registered apprentice training helps the individual worker, especially in an age in which the unskilled man is considered the most expendable and burdensome member of his community. As industries require fewer and fewer semi-skilled and unskilled workers, proper training can be a big step toward maintaining job security.[29] And in a registered program, the rights and privileges of the individual apprentice are protected by the State.

The consuming public also benefits from a registered apprentice program, insofar as it helps to produce those high quality products and services that only trained hands and minds can produce.

To the unions, it is a device to prevent the infiltration into their trades of incompetent or half-competent workers whose presence might tend to glut the labor market and depress the wage rates of skilled journeymen. The State makes certain that minimum trade standards, agreed upon by both labor and management, are adhered to for training purposes.

From the point of view of industry as a whole, a registered apprenticeship program raises the level of skills and thereby helps to increase the individual worker's productivity.[30] It enables the individual employer to build up a reservoir of skilled workers; at the same time, it gives him the opportunity to gear the training program to the sompany's needs. If the training program is well supervised, labor turnover is low, and graduate apprentices stay with the company. It enables the employer to assure that high quality workmanship is maintained. Not only do apprentices usually start producing at the very beginning of their training, it is claimed, but the cost of their training is lower proportionately than that of "quickie" programs.[31] Thus, "apprentice training is not only the key to efficiency and lower labor cost, but it is also the foundation for the future of industry."[32]

Above all, in an era when labor and management cooperation is needed in many industrial activities, the fact that joint registered programs bring them together for training purposes serves the cause of industrial peace.[33] At the same time, securing their cooperation is a major problem for the joint registered apprentice training program. If both employers and journeymen in a given trade are well organized, it may either facilitate or hinder cooperation between them. And if either is better organized than the other, the one may successfully prevent the other from controlling the training.

Unions see apprenticeship not only as a means to maintain high working standards, but, more importantly, as a way in which to restrict the number of men who enter the trade and thereby to exercise control over their jobs and keep wages high.[34] The presence of a large number of skilled workers in the labor market may cause their wages to fall and at the same time increase wage rates for unskilled workers, since, presumably, there will be fewer of them available for unskilled work. As Samuel Gompers said, "Industrial education must maintain a fair and proper apportionment of the supply of labor power to the demand for labor power in every line of work."[35]

The employer's interest in apprentice training is quite different. Aside from maintaining a certain quality level and increasing productivity, he wishes to expand his skilled labor force and to lower their wages. These differences between employers and unions regarding goals may lead to conflict with respect to control over the apprentice and the contents of related instruction and the shop training schedule.

In some cases apprentices are considered full members by the union and their rights and privileges jealously guarded; in others, they are given the status of junior members. In either case, the unions want control over them--to the unions, they are the potential membership base. But the employers pay for the apprentices' related instruction and bear the cost of any waste of materials in the early stages of training. This, the employers argue, gives them the right to greater control over the apprentices.

As for related instruction, both unions and employees agree that its objective is to teach the apprentice the "why" as well as the "how" of his trade. But they may disagree on how to do this and how to keep course content up-to-date. In addition, if the unions insist that apprentices be taught about unionism during their daytime attendance at the vocational schools,[36] employers may have just cause for complaint.

To deal with these problems, a number of groups have been established.[37] The joint apprenticeship committees, composed of both union and management representatives, have the responsibility of looking after the interests of apprentices, as does the Apprenticeship Division of the State Industrial Commission, through its field officials. Also, Joint School Advisory Committees are concerned with deciding the contents of the courses taught for apprentices. The effective functioning of these committees is most important for settling disagreements between unions and employers on these matters.

Factors Influencing Joint Apprenticeship Programs

The success or failure of a registered joint apprenticeship program and the extent of its popularity among aspiring youths depend on a number of factors, including (1) the degree of organization among employers and journeymen; (2) the general condition of trade standards; (3) the general economic condition of industry as a whole, and, in particular, of those industries that undertake traing; (4) the amount of promotional work done by the agencies involved in the training program; (5) general working conditions and compensation paid to apprentices; and (6) the nature of the laws on apprentice training in a given geographical entity.

To some extent, the degree of organization among employers and journeymen influence the practice of apprenticeship in any trade. This is especially the case with the joint registered apprenticeship system, as practiced in Wisconsin, where the key to the success of the program lies in the Joint Apprenticeship Committees. Where there is no organization among employers and workers, promotional agencies have to deal with individual employers and journeymen. Individual employers may have no interest in training apprentices, either because they can pirate from those employers who are training them, or because they do not find it difficult to recruit skilled workers. However, an organization can prevent or decrease pirating by taking punitive action against those employers who do it; it can encourage employers to train apprentices wherever possible; and its presence makes easier the arrangement of employer representation on joint committees.

Similarly, the presence of unions eases the task of placing labor representatives on joint committees. On the other hand, well organized journeymen may exercise tight control over the selection of candidates for training, including their number. Nonetheless, apprenticeship is at its best in trades where the membership is organized.[38]

Trade standards are important, because young men and women may have no interest in apprenticing to the so-called "sick trades"--those that do not train their journeymen and have no control over the number and qualifications of those who enter the trade. Anyone can become a journeyman and earn a journeyman's wages, without necessarily undergoing a long period of apprenticeship in the trade, and skills decline to the level of that possessed by laymen.

General economic conditions influence apprentice training; when there is a greater demand for skilled workers because of business expansion, apprenticeship can be expected to prosper. Employers will be willing to hire more men for training, and youths will be interested in apprenticing because of rising wage schedules and fewer lay-offs. At the same time, industrial depressions may set a limit to the number of trainees, since employers may be unwilling to incur the cost of training under uncertain business conditions. In addition, the seasonal nature of certain industries, such as construction, may adversely affect apprentice training.

To be more specific, a recent study indicates a relationship between the level of employment and the number of apprentices indentured. "Since apprentices must hold jobs if they are to be trained in their crafts, demand for their services fluctuates in accordance with economic conditions and changes in unemployment levels. In recession years when unemployment is high, few unions or employers will agree to the employment of new apprentices when those already in training on the job, or perhaps even skilled journeymen, may be faced with joblessness... employers in recession years are likely to be loath to encumber their workforce with newly registered apprentices. As a consequence, in recession years the number of newly registered apprentices tends to fall."[39]

The amount of promotional work done by Federal and State agencies has a large effect on apprenticeship. Employers of small and medium-sized businesses may not undertake training in their establishments if they are sure that a few large employers have apprentices and that skilled workers may be drawn away for higher wages, if they are needed. Also, employers may not in fact know or may be misinformed about the advantages of apprenticeship. In any case, there are few indentures written on the initiative of employers.[40] Herein lies the value of the promotion work done by the Federal and State agencies and the vocational schools.

The general working conditions in the shop where the apprentice learns his trade may influence his attitude. Similarly, the wages paid to apprentices may either encourage or discourage prospective candidates, depending upon their adequacy in relation to his personal and/or family needs.

Finally, State laws that require contractual agreement between an employer and his apprentice may discourage the former (and may be an additional factor in the low number of indentures requested by employers), as may laws that compel employers to keep extensive records on apprenticeship. Also, requirements that the employers pay apprentices for their related instruction may act as a disincentive.

The Role of Apprenticeship in Industrial Education

The materials used in and the methods of industrial production have changed in the last two or three decades: new metals require new methods of processing,[41] for example, and changes requiring new skills have occurred in the construction industry also. No longer is a single skill sufficient for the worker, for automatic machines can perform any repetitive job faster and cheaper than he can. Workers who were specialists must now fulfill the growing need for men with multiple skills.[42]

But learning multiple skills takes time and planned effort. Mere on-the-job training is inadequate, for it omits related instruction; on the other hand, mere theoretical knowledge is also insufficient, because it omits job experience. "Picking up a trade" leads to a waste of time, materials, and labor power. Thus, for acquiring proficiency in different skills, apprenticeship is considered the "soundest and the most efficient method of training..."[43]

Apprenticeship is the education of employees, a method of developing skilled manpower for industry, but is an adjunct to industrial activity, not its main job. At a time when skills become quickly obsolete, there is an even greater need to coordinate the present development of skills with future requirements. But in a free economy, industry is likely to be more interested in developing only those skills needed here and now. A few large companies may train their own skilled labor force to meet future as well as present demands, but smaller companies may be less sure of their future. Apprenticeship education is not a form of philanthropy; it must eventually pay off. Yet small companies face many problems: the apprentice might quit after his training is completed, particularly in favor of a large company which offers prospects for promotion and other advantages. Besides, they may only be able to take on apprentices when their business enjoys a boom. To train apprentices in both war and peace and in both boom and depression may serve the national interest, but it may not necessarily be advantageous to small companies. The point is this: in its function as industrial education, apprenticeship neither is nor any longer can remain the sole responsibility of industry.

Apprenticeship is an important part of the larger problem of manpower training and planning in a dynamic society. It is related to the problems of retraining those with obsolete skills, ending unemployment, and dealing with delinquency among youths. A government which finds itself responsible for paying Social Security to its elder citizens, providing jobs for its unemployed, dealing with its "human junk pile" of those with unwanted skills, and making responsible citizens of its delinquent youths has a greater stake in the apprenticeship program than anyone else.

Footnotes to Chapter 1

1. The material for this section is taken largely from Paul Bergevin's Industrial Apprenticeship (New York: McGraw Hill, 1947), pp. 3-20

2. Walter F. Simon to Miss Annie McLenegan of Beloit, October 5, 1936, State Historical Society collection, Madison, Wisconsin.

3. Ibid.

4. Stewart M. Scrimshaw to Edwin E. Witte, March 26, 1917. Administrative files of the Apprenticeship Division, Sate Historical Society, Madison, Wisconsin.

5. Paul M. Bergevin, op. cit., p. iv.

6. Paul H. Douglas, American Apprenticeship and Industrial Education (New York: Columbia University Press, 1921), p. 71.

7. R. C. Siciliano, "Through Apprenticeship to Better Skills," Employment Security Review (October 1954), p. 3.

8. Edward E. Goshen, National Apprenticeship Program (Washington, D.C.: U.S. Department of Labor, Bureau of Apprenticeship and Training, 1962).

9. K. Leipman, Apprenticeship: An Enquiry into Its Adequacy under Modern Conditions (New York: Humanity Press, 1960), p. 1.

10. Paul H. Douglas, op. cit., p. 12.

11. W. F. Fairbairn, Fundamentals to Apprenticeship Operation (unpublished manuscript). Administrative files of the Apprenticeship Division, op. cit.

12. Edward E. Goshen, op. cit., p. 7.

13. See Chapter 4 for union regulation of apprenticeship.

14. W. F. Fairbairn, op. cit.

15. George P. Hambrecht, Director, Vocational and Adult Education, in a speech given at the 52nd Annual Convention of the Wisconsin AFL-CIO, Oshkosh, August 21-25, 1944, Annual Proceedings, p. 338.

16. Ibid.

17. Edward E. Goshen, op. cit.

18. Ibid.

19. W. F. Fairbairn, op. cit.

20. James Schultz, Assistant Director, UAW Skilled Department, speech to the Apprenticeship Conference of the Wisconsin State AFL-CIO, Green Bay, January 30-31, 1962, minutes of the conference proceedings, p. 5.

21. W. F. Fairbairn, op. cit.

22. Annual Proceedings of the 59th Annual Convention of the Wisconsin State AFL-CIO, Superior, August 20-21, 1951, p. 94.

23. Bureau of Apprenticeship and Training, Labor-Management Participation in Registered Apprenticeship, Technical Bulletin No. T.141 (Washington, D.C.: Department of Labor, 1964), p. 4.

24. Industrial Commission, Apprenticeship in Wisconsin (Madison, 1932), p. 9.

25. U.S. Department of Labor, "Help Wanted in Skilled Crafts," American Vocational Journal (April 1959), p. 1.

26. A. V. Korpowitch, Providing Related Instruction to Indentured Apprentices (Milwaukee: Vocational and Adult Education School, 1963), p. 1.

27. Labor-Management Participation in Registered Apprenticeship, op. cit., p. 1.

28. Ibid., p. 2.

29. Apprenticeship Division, Annual Report 1961 (Madison, 1961), p. 1.

30. Bill Butler, Tulsa Apprenticeship Plan Proves Successful, reprinted by the Bureau of Apprenticeship and Training, U.S Department of Labor, Washington, D.C., 1963.

31. "Today's Best Training Buy," Management Review (February 1953), p. 72.

32. Martin P. Durkin, President, United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry, address before the Convention of the National Association of Plumbing Contractors, Washington, D.C., May 11, 1954. Memorandum to Wisconsin State AFL-CIO from Maurice M. Hanson.

33. Bill Butler, op. cit., p. 2.

34. F. Foltman, "Apprenticeship and Skill Training, A Trial Balance," Monthly Labor Review (January 1964), p. 28.

35. As quoted by Paul. Douglas, op. cit., p. 329.

36. See Resolution of the Annual Apprenticeship Conference of the Wisconsin State AFL-CIO, Eau Claire, 1963.

37. The composition, nature, and functions of these committees are dealt with in Chapter 6.

38. Administrative files of the Apprenticeship Division, *op. cit.*

39. Bureau of Apprenticeship and Training, *Apprenticeship and Economic Change*, Bulletin 64-128 (Washington: U.S. Department of Labor, 1964), p. 20.

40. Administrative files of the Apprenticeship Division, *op. cit.*

41. See memorandum from John Hidenreich, International Association of Machinists,District 10, Milwaukee, to the Secretary of the Wisconsin State AFL-CIO, February 7, 1957, p. 6

42. J. R. Stevenson, *The Growing Emphasis on Skill* (Washington, D.C.: Carpenter, 1959).

43. R. C. Siciliano, *op. cit.*, pp. 4, 18.

CHAPTER 2

THE LEGAL BASIS FOR APPRENTICESHIP IN WISCONSIN

The Comprehensive Apprenticeship Law of the State of Wisconsin--the first law on apprenticeship in the nation--came into effect on the 1st of July, 1911. This does not mean that there were no statutory provisions regarding apprenticeship in Wisconsin prior to that law. There were, in fact, laws relating to the indenturing of apprentices, but they were more often violated than observed.

According to the earliest known law on apprenticeship in this State, dated 1849, a minor, with the consent of his parents or guardian, could make an indenture binding himself and the master. The indenture was to contain the following agreements: (1) to teach the apprentice some trade; (2) to teach the apprentice reading, writing, and figuring; (3) to pay allowances and other benefits to the apprentice; (4) to give the apprentice a Bible at the end of the apprenticeship. In addition, the law also provided that runaway apprentices could be arrested and sentenced to twenty days in the county jail or returned to the master. Finally, the master had the privilege of discharging himself from the obligations of the indenture if he could present proof of misbehavior by the apprentice.[1]

The next known Wisconsin law on apprenticeship was that of 1878, which was mentioned by the Commissioner of Labor Statistics of the State of Wisconsin in his first report: "Chapter CX, R.S. of 1878 is entirely devoted to that subject (apprenticeship). Yet it is doubtful whether an apprentice was ever dealt with in Wisconsin according to the terms of this law; especially is it doubtful whether apprentices receive the full benefit of section 2379 (which sets forth the terms of indenture)."[2]

Chapter 167 of the Law of 1882 dealt with apprenticeship, setting the qualifications for pharmacists and providing punishment for violations thereof, but "no attempt was made to regulate or prescribe qualifications for any other trade or business that was dangerous to life or limb."[3]

Thus, these statutes of 1878 and 1882 did little to control apprenticeship practices. Before 1882, apprentices learned their trades in shops or the homes of the earlier settlers. After 1882, some employers gave their apprentices written contracts; others merely made verbal promises to teach a trade. Apprentices were forced to pick up their trades as they could, and their wages were very low. For example, an apprentice machinist was paid five cents an hour and had to work ten hours a day, six days a week. During his second year of apprenticeship, he was given a half-holiday, working five-and-a-half hours on Saturday. In his third year, his wages were raised to seven-and-a-half cents an hour, and so it remained until the end of his apprenticeship.[4]

Many employers hired apprentices without any contract at all, and unfair practices were common. Employers were not obliged to teach a trade at all, and if they did, it was often only a few special techniques to suit their particular purpose. Even if contracts were drawn up, the following extract illustrates their nature:

> It is hereby fully and clearly understood and agreed and made a part of this agreement that the employer reserves the right to, at any time, annul this agreement and discharge the apprentice named herein...if his conduct shall be in its opinion detrimental to its interests...or for any other good and sufficient reason. In order to avoid proving such conduct it is agreed that said dismissal for any of the causes aforesaid shall be final and conducive evidence of the proof thereof. 5

As a result, apprenticeship was in a sad state of affairs. The Commissioner of Labor in Wisconsin wrote, in his first biennial report:

> Apprentices, not understanding the law, usually bind themselves out by the most indefinite verbal contracts, without the required consent, formality or indentures. It is agreed that the minor shall receive so much pay during the first year and if he shall remain, a certain increase of wages thereafter, and that is all there is to the bargain.
>
> This Bureau found no contracts with apprentices--except in the case of orphans--that complied with the law and usually the verbal agreements comprehend nothing but the graduation of wages liable to be terminated at the option of either party without notice, bar or redress.

He also commented on the nature of apprenticeship itself:

> The present system is in consonance with the modern American idea of speed. It does, it is true, enable a boy to get, during his minority, somewhat larger wages than the average pay of a bounden apprentice faithfully mastering all the intricacies of his trade; but when that boy reaches the period of manhood and maturity, he is not the full and practical master of any trade or profession that he should be in this swift and progressive age and so, in the majority of cases he remains a common man receiving common wages and occupying a common position throughout life.
>
> ...almost every trade is well sprinkled with men who never served an apprenticeship and are mere "jacks"--competent only here and there in a calling of whose every branch they should be complete masters...prescriptions are sometimes compounded in such a manner that they kill; brick and stone structures fall by reason of having been improperly built by those ignorant of the strength of materials and steamboilers of all kinds explode in the care of engineers unacquainted with the principles of hydraulic pressure and mechanical movements. 6

Poor training resulted in poor workmanship, and the public bore the loss.

In 1889, a group of foundry employers in Milwaukee formed an organization. Then, as a result of labor difficulties, the Milwaukee machinerymen in 1901 founded the Milwaukee Metal Trades Association, which in 1903 became the Milwaukee Metal Trades and Founders Bureau. Some metal trades firms were also members of the National Metal Trades Association and the National Founders' Association and had been employing apprentices. Technological advances had led to the need for more expert training of young employees in metal trades, and some of the employers evinced interest in providing better training.[7] As a result, a committee was formed to study the problem of training for youths who wanted to work in the metal trades, consisting of the following: Mr. T. J. Neacy, of the Filer Stowell Co.; Mr. C. F. Wieland, of the Kemp Smith Manufacturing Co.; and Mr. Alonzo Pawling, of the Pawling and Harnischfeger Co.

The committee's report indicated that the apprenticeship system in Milwaukee suffered from a lack of uniformity in wages, contract forms, hours of labor, etc. It recommended that an effort be made to improve apprenticeship conditions. In response, some employers in the metal trades adopted uniform measures for wages, hours, etc., and a few began to use the National Metal Trades Association contract form. There was no further action, other than the urging of an increase in the number of apprentices employed.

During the first decade of this century, Mr. Theodore Vilter, of the Vilter Manufacturing Co., which had twenty indentured apprentices, decided that enough was not being done for the apprentices in his shop. In order to teach them both the "how" and the "why" of their trades, he established a class in his plant and hired a Professor Smith, an engineer, to teach his boys two hours each week. Other employers followed suit, and in the course of time, teaching the "why" of trades to apprentices became a part of the Milwaukee Continuation School's curriculum. Some employers showed an interest in starting a trade school, to provide related instruction to apprentices, and as a result, a boy's technical high school was established. While it imparted trade knowledge, the boys who graduated from this school suffered from a lack of shop experience, and to overcome this deficiency, they were given an allowance of six to twelve months extra on their regular four-year contracts.

With all these developments, apprenticeship was being widely discussed by 1905, although nothing definite had been done. A start toward action was made, however, in the following year, when a survey on apprenticeship was conducted.[8] The survey received reports from twenty-five shops on their views toward and practice of apprentice training. Fifteen shops had a regular schedule for apprentices; ten did not consider training them. The starting age for apprentices was sixteen, and the training period was four years. Twelve shops had written contracts with their apprentices; three had only verbal contracts. Eleven shops had no trouble in holding apprentices to contract, while four found it difficult. In the fifteen shops, there were altogether 2,064 machinist and 217 apprentices, or a ratio of nine or ten to one. No constructive action was taken on the survey's findings because of the strike by molders employed in the Milwaukee area foundaries in 1906. Efforts to streamline the apprenticeship system were shelved, for the time being.

In 1908, another committee was formed to study the apprenticeship problem: Messrs. E. J. Kearny, of Kearney and Trecker Co.; C. Edwin Search of Allis-Chalmers Manufacturing Co.; Henry Harnischfeger, of Pawling and Harnischfeger Co.; Donald Frazer, of the Chain Belt Co.; and W. W. Coleman, of Bucyrus Co. After a year's investigation, the committee submitted its report in May 1909. Its major recommendations were: (1) employment of more apprentices; (2) an increase in the wages paid the apprentice, in order that he might be self-supporting during his apprenticeship; (3) adoption of a uniform contract form; (4) spreading the hours of training more evenly; (5) teaching the entire trade, rather than a part of it; (6) issuance of a diploma and a credential book signed by the firm and association officials upon completion of training; and (7) registration of all apprentices with the Milwaukee Metal Trades and Founders Bureau,and discontinuance of the practice of moving apprentices from shop to shop, except with the consent of the interested parties.

Some of the committee's recommendations were put into force by a portion of Milwaukee employers. The Milwaukee Metal Trades Association adopted a uniform contract with the following provisions: (1) a year's work for an apprentice would consist of 2,750 hours, and the four years of training should not exceed 11,000 hours of work; (2) the hourly rates of pay should be 10 cents during the first year, 11 cents during the second, 12 cents in the third, and 15 cents during the fourth; (3) a bonus of one hundred dollars was to be paid by the employer upon completion of training; and (4) employers were to provide the necessary instruction to apprentices in the shop or at a continuation school.

However, employers were unwilling to adopt the uniform contract suggested by the Metal Trades Association, because of the provision of the 1898 apprentice law, which was widely held to be obsolete, that they instruct "the apprentice in the general rules of arithmetic, for teaching him to read and write and giving him at the end of service a Bible." And they were discouraged from indenturing more apprentices by the fact that many apprentices were jumping contract at the end of the second year.

The State Legislature of 1909 appointed an interim committee to deal with plans for instructing the youth of the State who could not attend school, consisting of C. R. Van Hise, President of the University of Wisconsin; L. E. Reber, Director of the University of Wisconsin Extension Division; C. P. Cary, State Superintendent of Schools; C. G. Pearce, Superintendent of Milwaukee Schools; and Dr. Charles E. McCarthy, head of the Legislative Reference Library, who was the secretary and later became the principal author of the legislation recommended by the committee.[9] Dr. McCarthy went to Europe, at his own expense, to study the educational and apprenticeship methods employed there, especially in Germany. The committee's report recommended the establishment of a system of vocational schools and a State-regulated apprentice training program.[10]

In 1910, a new committee was formed, with the aid of the State Industrial Commission, with the objective of framing new legislation on apprenticeship suitable to the existing conditions. Of the committee's eleven members, ten were employers or their representatives, the eleventh being the Superintendent of Vocational Schools. Nonetheless, it consulted members of the Industrial Commission, leaders of organized labor, and the continuation school authorities. Though many issues were discussed, those relating to wages, schooling, duration of training and the ratio of journeymen to apprentices assumed greatest importance. Arguments grew "warm and hot sometimes," but finally, agreement was reached on every point except the journeyman-apprentice ratio, which was omitted from the bill presented to the Legislature.

Even though there was "considerable opposition" to the bill, the majority of the metal trades employers supported it, as a result of their longtime interest in apprenticeship. And support came from other quarters: Governor McGovern; one Mr. Perry, a member of the State Assembly; Mr. A. J. Lindemann, an industrialist; and, of course, Dr. McCarthy. The active support of the employers in the metal trades and the interest shown by these men enabled the Legislature to pass the nation's first comprehensive apprenticeship law on July 1, 1911 (Chapter 347, Laws of 1911, Sections 2377 to 2387).

In 1911, the State Legislature also enacted the Industrial Education Act, which authorized the establishment of continuation and trade schools, to provide related instruction to apprentices, as well as adult educational facilities. Taken together, these two laws helped to fulfill the growing need for better apprentice training.

The Apprenticeship Law of 1911 contained the following provisions: (1) every agreement between a minor and an employer to teach the minor a trade must be an indenture; (2) no indenture may be made for less than one year; (3) if the minor is under 18, the indenture must be made for two years or more; (4) the Industrial Commission had the authority to prosecute for violations of the indenture; and (5) every indenture must contain agreements as to the number of hours of work and of instruction, to teach the whole trade, that at least five hours a week be spent in instruction, and on compensation. The law also provided penalties for breach of indenture by either party. The employer had the right to discharge the apprentice for any violation of rules, and he was asked to pay a bonus of at least fifty dollars and give a certificate to the apprentice upon completion of his training. It further required that a copy of the indenture be filed with the Industrial Commission. And finally, it repealed the Law of 1849.[11]

This law was an attempt to correct the situation which existed at that time. It recognized that apprenticeship should not be a burden on the employer for the benefit of the employee, and that the apprentice who receives education must pay for it through his adherence to the provisions of the indenture. Yet, more than half a century later, it seems that the law has not succeeded in lightening the burden of the employer who wants to train apprentices (see Chapter 17, where the findings of a survey conducted among Wisconsin employers are reported).

Many previously uncovered aspects of apprenticeship were affected by the Law of 1911. Not only did it stipulate that apprentices must receive at least five hours of instruction per week until they reach eighteen; it also listed the subjects to be taught: English, physiology, hygiene, citizenship, use of safety devices, business practices, and "such other subjects as the State Board of Industrial Education might approve." Moreover, in subjecting violators of the law to prosecution by the Industrial Commission,[12] it made the State government one of the parties to the indenture. No longer was the apprentice contract a private agreement between an employer and his apprentice; it became subject to regulation by the State. This is the essence of the law.[13]

Its objectives are "to assist in the development of better trained workers for the trades and...to act as a protective measure for minors entering the trades." The law introduces order into trade and craft training programs on a State-wide basis, regulates training, and protects the rights of the parties concerned. It makes indentures enforceable and guarantees mutual obligation in apprentice training. It protects the employer from apprentices who would quit without cause, while assuring the apprentice an all-around training that is not only "mechanical but technical and scientific as well."

Industrial good will and free choice are the philosophical bases of the Wisconsin Apprenticeship Law. The employer is not compelled to become involved in apprentice training, but once he wishes to hire someone who is a minor for purposes of training, he is expected to abide by the law. Should he (or the apprentice) violate the contractual agreement, then the law becomes punitive. However, if the "apprentice applicant" is of age and can find an employer who is willing to teach him a trade without entering into a contract, then he is free to do so. But if he wishes to learn a trade governed by the State's licensing laws, he must enter into a contractual agreement with the employer.

Some feel that the contract binds the employer more than it does the apprentice, especially if the latter is a minor, thus placing the employer at a disadvantage. Nonetheless, the parents of the apprentice are liable to prosecution if it can be shown that they caused or assisted the apprentice to violate the provisions of the contract. (Violations occur on both sides, and it would be instructive to learn the number of cases in which employers were prosecuted and apprentices were not, but no such data is available form the Industrial Commission.)

The law makes it clear that the contract between the employer and the apprentice is primarily for the purpose of teaching a trade, not for the apprentice's work. The apprentice is not an employee who has agreed to work and only incidentally to learn; if he works at all, it is only in order to learn. This blending of learning and working in order to learn is the result of the historical development of industrial training in Wisconsin.

Despite its many merits, the law has been criticized as being a good piece of legislation in theory, only. Employers have called it too exacting, while the officials responsible for its emforcement assert that the provisions for its administration were far from adequate.[14]

The employers' criticisms have centered around its requirements that apprentices attend school during working hours, that they be paid for the time they spend in school, and that they be paid cash bonuses upon graduation.[15] Some objections have been raised, by employers and vocational school officials , to the specifying of the subjects to be taught. Both employers and organized labor would like to have a greater voice in the determination of the content of the related instruction.[16] As a result, employers were reluctant to hire many apprentices--between 1911 and 1914, only forty-one new indentures were entered into in compliance with the terms of the new legislation. While employers who had already been training apprentices continued to do so under the new law, those who had never engaged in training showed no interest in beginning then.

State officials contended that "the framers of the law had mechanical trades in mind when they drafted its provisions and that the wording of these provisions often (did) not apply to other trades, particularly trades in which there is a more artistic element required. If we had a clause in our law giving us power to vary the contract somewhat in order to meet the requirements of the different trades it would facilitate our work a great deal."[17]

From the enactment of the law in 1911 until 1913, progress in apprentice training was slow. As of July 1, 1913, there were only 270 apprentices indentured under the new law. Though many employers in the metal trades hired apprentices for training purposes, some found its provisions too stringent, or at least not readily acceptable,[18] and as a result, most of the apprentices were indentured in the metal trades. Other employers would hire minors with no understanding that they should be taught a trade, leaving the Industrial Commission powerless to regulate them, or would discharge apprentices and rehire them as mere helpers. Another early problem centered around the vocational school teachers. Employers were willing to send their apprentices to continuation schools only if the teachers were practical shopmen with education and teaching ability, rather than regular schoolteachers.

In the course of time, employers began to be more vocal about their dissatisfaction with the new law. The comments made by one employer, Mr. Neacy, in a letter to the Milwaukee Free Press, published June 16, 1912, are typical. He expressed his opposition to paid related instruction, especially for those apprentices over sixteen years of age, and concluded that it was unfair to ask the employer to pay apprentices while they were not producing anything. He also objected to the provision for five hours of instruction each week, on the grounds that it disrupted the work schedule in the ship. He asserted that apprentices did not learn during school hours, nor did they value the related instruction much. Finally, he wrote, the Industrial Commission had been given unlimited powers.[19]

In another letter to the Milwaukee Free Press, he argued that the new law had eliminated apprenticeship in Wisconsin and that it was a "German Invention" imported by Dr. Charles McCarthy, its chief architect. He claimed that there had been no new indentures since the enactment of the law, and it had thus prevented 50,000 Wisconsin apprentices from signing articles and learning a trade annually. Before the new law's passage, apprentices had to be eighteen; they had finished grammar school, and many were high school graduates. Further, the new law helped only those who had come from the South of Europe. Above all, he said, the law created specialists and not all-around mechanics.[20]

Dr. McCarthy replied to Mr. Neacy's charges, in a letter to the Milwaukee Free Press. He regretted that Mr. Neacy condemned the new law without trying it and asserted that, contrary to his critic's statements, the new law helped to create all-around mechanics and not specialists.

This did not end Mr. Neacy's criticisms, however. In a third letter, dated November 3, 1913, he opposed the requirements for paid related instruction and the bonus payment. He argued that five hours of instruction each week only duplicated apprentices' learning. And it was "un-American" to pay an apprentice while he learned. Since apprentices played "hookey" during their school hours, he suggested they should attend school on their own; this would make them better learners. The system that required employers to pay for instruction, he said, was a "sponge system." If apprentices were interested in learning, they should attend night schools. Finally, he charged that the new law gave "police powers" to the Industrial Commission to enforce the contract. (We have noted above that the authorities who had to enforce the law felt that they should have been given more and broader powers.)

How much Mr. Neacy's vehement criticism affected the thinking of officials, legislators, and others interested in apprenticeship cannot be assessed. But certainly, it reflected to some degree the dissatisfaction felt by many employers regarding some of the provisions of the law.

In 1913, some changes were made in the Apprenticeship Law. Its administration became a regular function of the Industrial Commission, and a new department was created within the Commission for this purpose.[21] That same year, Wisconsin's minimum wage law gave the Industrial Commission the right to classify certain occupations as trade industries and to require that all minors employed in such trades be indentured (Chapter 712, Section 104.08 of Wisconsin Statutes). However, this power has seen only limited use. The Commission denies requests for such classification until a trade is will organized, and effective local apprenticeship committees are established. As of today, only barbering, plumbing, cosmetology and watchmaking are covered by this provision. Carpentry is treated in a special law which requires all persons learning that trade to be regularly indentured.[22] Also in 1913, the first State-wide General Advisory Committee was formed to assist the Industrial Commission in the establishment of practicable administrative policies.

In the meantime, the Association of Commerce became interested in apprentice training and appointed a committee made up of representatives from the Industrial Commission, the metal, textile, building, and leather trades, and the State Federation of Labor, for the purpose of popularizing apprenticeship among employers of various trades.

But youths as well as employers showed a lack of interest in apprenticeship. Casual surveys conducted by local vocational schools in different parts of the State showed that boys were unwilling to become indentured apprentices. The following illustrates the typical attitude among young men:

> ...in regard to signing an apprenticeship agreement the majority seem to laugh at the matter. Why should they work for a small wage per day when they could make $2.50, $3.00 and $3.50 per day piece work? They also do not like the idea of working child labor hours. They seem to think that such hours put them in "the tin shoe and tepid milk" class of individuals. 24

It was also reported that young men were not very keen on becoming all-around mechanics. They argued that they could make more money as specialists.

One may presume that the general reluctance of both employers and youths was responsible, to a large extent, for the slow progress made by apprentice training. In any event, as a result of all this, the Industrial Commission decided to re-examine the workings of the law. The State-wide General Policy Advisory Committee was reduced from twenty-three to six members--three representatives of organized labor and three of management--which came to be known as the Executive Committee on Apprenticeship. This committee functioned until 1933; during the Depression, it held fewer and fewer meetings and finally ceased operations entirely.

Meanwhile, the criticisms of the 1911 Apprenticeship Law led to the creation of a committee, consisting of both labor leaders and employers, in October 1914, to study possible changes in the law.[25] In addition, the Industrial Commission appointed a subcommmttee to conduct a survey concerning the slow progress of apprenticeship. It mailed 1,000 questionnaires to unions, firms, and other interested persons throughout the State, to collect opinions on all aspects of apprenticeship and related issues, as well as the questions raised about the 1911 law. Three hundred ninety-one replies were received. The major finding was that one-third of the State's manufacturing firms could take apprentices but did not; the idea of apprenticeship had been forgotten or never thought of by many employers.

The subcommittee recommended that a campaign somewhat like the "safety first" movement be started, to encourage (1) employers to take apprentices; (2) parents to have their boys learn a trade; (3) boys to take training in a trade; (4) workmen to impart their knowledge to apprentices. It also stated that "an atmosphere favorable to apprenticeship must be created before progress could be expected."

The survey also disclosed a difference of opinion regarding what constituted an apprenticeable trade, from a simple job that could be learned in two weeks, to one requiring a lifetime. This issue was settled, however, when the State Advisory Committee on Apprenticeship to the Industrial Commission defined an apprenticeable trade as one consisting of "any line of work with the hands that requires continued time, practice, and thought to become proficient and has in it the creative and constructive elements."

The Apprenticeship Law was amended in 1915 (Chapter 133, Laws of Wisconsin 1915), to provide a meeting place for the two different interest groups in the apprentice training system, the employers and the apprentices. It gave broader powers to the Industrial Commission, simplified apprenticeship statutes, and introduced certain changes in the 1911 law.[26] The provision requiring payment of a cash bonus was omitted; related instruction was required only until apprentices reached the age of eighteen; specification of the subjects to be taught was removed; the right of the State Board of Vocational Education to determine the contents of related instruction was cancelled; the Industrial Commission was given the power to adopt suitable administrative orders to facilitate the promotion of sound apprentice training; and finally, the Commission was empowered to classify trades and industries, to supervise the enforcement of contracts by employers and apprentices, and to mediate differences between them. The provision that required employers to pay apprentices while they attend vocational schools was retained.[27] These amendments came into effect on July 1, 1915.

The next significant development in the growth of Wisconsin's apprenticeship program was the establishment of a separate agency to administer the law. The Apprenticeship Division was established in 1915 as a part of the Industrial Commission, and a full-time supervisor was appointed. He "...managed to find sufficient space at the Milwaukee Public Library to accommodate a desk and a chair."[28]

For the first time, a well worked out method of keeping track of indentures was adopted in 1916; and a uniform indenture blank for all trades and all kinds of apprentices was prepared. The State Advisory Committee, with the assistance of the Industrial Commission, developed definite standards for apprenticeship in different trades and industries, after receiving the advice of both employers and organized labor and other employees. Apprenticeship committees were formed in the metal trades, barbering, bricklaying, engraving, plastering, printing, painting and decorating, and tailoring. That same year, definite work schedules for apprentices were determined for auto machinists, barbers, blacksmiths, boilermakers, bricklayers, electricians, engravers, lithographers, machinists, molders, pattern-makers, plasterers, toolmakers, and wire weavers. After consulting the joint committees, the Industrial Commission also established rules governing schedules and developed a form of diploma to give to graduating apprentices.[29]

The office of the Apprenticeship Division of the Industrial Commission was located in Milwaukee until October 1917. Then it was moved to Madison, but the Milwaukee office continued to function, as well.[30]

In 1918, the first of the State-wide trade advisory committees for various trades was formed for plumbing. By 1912, such committees had also been created for electricians, carpenters, tailors, barbers, sheet-metal workers, printers, and plasterers.

The law was amended again in 1919. To replace the 1915 provisions that apprentices who were minors should attend school five hours a week, at least until their eighteenth year, the 1919 amendment required all apprentices to attend school five hours each week during the first two years of their apprenticeship. Thus, instead of some apprentices receiving "a lot of schooling" and others none, everyone was assured of a certain amount of theoretical training in connection with their trade. This amendment was favored by both the Industrial Commission and the State Committee on Apprenticeship, because it enabled apprentices to receive more and better training irrespective of their age.

Between 1919 and 1921, several minor changes were made in the law. Then, in 1923, Mr. Walter F. Simon was made State Supervisor of Apprenticeship and was assisted by two deputies: Mr. Carl Rothe worked in the Milwaukee office, while Mr. Henry Poesch worked throughout the State to promote apprenticeship.

A 1923 amendment related to the hours of school instruction, which previously required that the "period of instruction should not be less than five hours per week or the equivalent..." Few vocational schools were giving a full five-hour weekly period of instruction, many giving four hours a week, to fit in better with the regular hours of other classes. Four hours a week during the forty-week school year amounted to 160 hours a year, rather than 200 hours, as in a five-hour week. Moreover, there was "some misunderstanding" regarding how much time was meant by the word "equivalent." To clarify these matters, the four-hour week was legalized, and for apprenticeships of two years or less, the requirement was set at four hours a week. For apprenticeships of more than two years' duration, the four-hour week was accepted, but a full 400 hours of instruction were required, necessitating the extension of weekly instruction past the first two years of apprenticeship. This change was approved by the State Advisory Committee and came into force on September 1, 1923.

In 1929, the Industrial Commission ordered that all minors employed in the plumbing trade be indentured under the Apprenticeship Law. This helped to increase the number of apprentices in that trade, but apprenticeship in general suffered during the early 'thirties. The Depression adversely affected new indenturing, while apprentices already indentured clung to their jobs.[31] For example, there were 821 new indentures in 1925, but 73 in 1931, 55 in 1932, and 46 in 1933. Total completions amounted to 382 in 1925, 4 in 1930, and 33 in 1931; total cancellations were 372 in 1925, 58 in 1930, and 13 in 1931, and in 1932, there were 209 cancellations, the largest number since 1926. As a result of these declines, the Industrial Commission set aside apprentice training in 1930. Apprenticeship transactions began to increase after 1934, and the number of new indentures rose.

Another amendment to the Apprenticeship Law was passed in 1937, enabling an apprentice to enter into indenture with an organization of employees, an association of employers, or agencies such as the Joint Apprenticeship Committees. Hitherto, apprentices were indentured only to private employers, and this change created new opportunities for apprenticing. In addition, employers were permitted to assign their apprentices to such organizations, associations, or agencies or to other employers, so that they might learn different aspects of their occupations. Finally, the Industrial Commission was empowered to terminate any indenture, after hearings, if it believed there was reasonable cause to do so; and it was authorized to issue whatever orders it found necessary to carry out the intent and purpose of the law pertaining to apprentices.[32]

In 1942, carpentry was made subject to the Apprenticeship Law, so that those who wished to learn the trade were required to undergo training under its provisions. Also, special indenturing orders were issued for painting and decorating, and as a result, the number of apprentices increased in these trades.[33]

The Federal Veterans Assistance Laws, passed by the United States Congress in 1943, added impetus to apprentice training in the State. The G. I. Bill, as it is commonly known, provided that veterans may enter apprenticeship and receive subsistence allowance for a maximum period of 48 months. However, at no time could subsistence pay plus wages paid by the employer exceed the skilled or journeyman's rate in the relevant trade or establishment. Since all indentured apprentices receive a wage increase at the end of each six-month period, veteran's subsistence allowances were reduced as their wages rose. Usually, within three years they were no longer eligible for subsistence allowances, because either the combination became equal to the journeyman's rate or they reached the ceiling on earnings established by the law--$210.00 per month for veterans with no dependents; $270.00 with one dependent; or $290.00 with two or more dependents. Veterans were entitled to receive these benefits until January 31, 1955.[34] The Apprenticeship Division of the Industrial Commission was the official approving and supervising agency in the State for apprentice and job training for veterans.

These developments resulted in an increase in apprenticeship transactions. In 1940, there were 1,099 new registrations, but in 1948, the peak year, there were 8,702 new registrations. Meanwhile, 1940 saw 444 completions and 309 cancellations. The peak year for completions, 1950, registered 2,909, and there were 3,958 cancellations in its peak year, 1948 (for details, see Chapter 12). The Apprenticeship Division of the Industrial Commission expanded as well, from five employees in 1942 to 31 in 1947-48. This increase was partly financed by the Veterans Administration.

A 1943 amendment to the Apprenticeship Law, Chapter 159, Section 106.01 (3), stated, "...any minor 16 years of age or over or any adult may, by the execution of an indenture, bind himself as hereinafter provided for a term of service not less than one year..."[35] Thus, apprenticeship regulation was no longer limited to minors; the State's protection was extended to adults, as well, if they cared to sign an indenture and become an apprentice in order to learn a trade. This amendment paved the way for the indenturing of World War II veterans in 1945.[36] The carpenter's trade was also affected by changes in 1943: an apprentice in that trade could be bound to an indenture on his signature alone, if he were 21 or older, making it unnecessary for his parents or guardian to sign. In addition, the period of apprenticeship was set at four years, regardless of the apprentice's age, although it might be extended up to one year more by the Industrial Commission, upon application from an apprentice or his employer.

After 1946, apprenticeship transactions declined, despite a certain influx of Korean War veterans in the 'fifties. Total new registrations fell from 8,702 in 1946 to 1,376 in 1962--less than the figure for 1942. Completions declined from 2,909 in 1950 to 882 in 1962. Accordingly, the Apprenticeship Division shrank to 15 employees. This brought another change in the Apprenticeship Law in 1959, with the objective of encouraging employers to hire more apprentices. First, "an employer shall pay an apprentice for time when the latter is receiving related instruction for no fewer hours than those specified in the act at the minimum and that extra hours of instruction on the apprentice's time may be agreed upon between the employer and the apprentice." Previously, the employer had to pay for all hours of actual instruction. The amendment also stated that all apprentices, regardless of age, may work overtime, and that employers must pay for such overtime work on the same basis as to journeymen in the same trade and establishment. The previous limit on overtime for apprentices--thirty hours in any one month--was cancelled.[37]

The 1911 and 1915 laws, as subsequently amended, operate today in the following manner: the apprentice must satisfy a minimum age requirement of sixteen, but no maximum age is set. The employer agrees to teach a trade in full to the apprentice; the apprentice and the employer agree to enter into a written contract, in the form of an indenture signed by the employer, the apprentice, and one of his parents or his guardian. Three copies of the indenture are filled out (standard blank forms are provided by the Industrial Commission): one copy going to the employer, one for the apprentice, and one for the Apprenticeship Division of the Industrial Commission in Madison, where it must be filed within thirty days after the apprenticeship begins. No indenture is considered to be in force until it is approved by the Industrial Commission.

The indenture contains the names and addresses of the parties involved, the exact terms of apprenticeship, the schedule of processes or branches of the trade to be taught, and the scale of wages to be paid throughout the term of training (which is considered to be a minimum--the employer can pay more, if he wishes). Once the indenture is filed with and approved by the Industrial Commission, the apprentice comes under its supervision. The Commission arbitrates any differences which may arise between the parties to the indenture; it determines what constitutes good cause for annulment of contracts; it issues cancellations of indentures and diplomas to graduate apprentices; and it enforces the terms of indentures and aids in apprenticeship promotion in the State.

The Apprenticeship Laws of 1911 and 1915 are said to constitute a landmark in the field of labor legislation, in which Wisconsin has been a leader,[38] although the provision requiring employers to pay for related instruction is still criticized.

Other Wisconsin Laws Affecting Apprenticeship

Section 104.08 of Wisconsin Statutes provides that "all minors working in an occupation for which a living wage has been established for minors and who shall have no trade, shall, if employed in an occupation which is a trade industry, be indentured under the provisions of Section 106.01." A "trade" or "trade industry" is defined as one "involving physical labor and characterized by mechanical skill and training such as to render a period of instruction reasonably necessary." The Industrial Commission is empowered to investigate, determine, and declare what occupations and industries should be designated as a "trade" or "trade industry." Section 49.02 (6) states that "every minor who shall be bound as an apprentice to any person shall, immediately upon such binding, if done in good faith, thereby gain a settlement where his or her master or mistress has a settlement."

The child labor law states that all minors under the age of 17, unless engaged in agricultural pursuits, must obtain a child labor permit before they may be employed. If, however, the minor signs an indenture, executed in conformity with the Apprenticeship Law, it is not necessary for him to have a permit, but to hire a minor under 17 without either a permit or an indenture is a violation of the law. In addition, if a minor who is injured on the job has on file either a labor permit or an indenture, and if he is not employed in prohibited employment, he is entitled to the same compensation as an adult would receive. If, however, he had neither permit nor indenture, or if he was engaged in prohibited work, he is entitled to three times the regular compensation, and the employer is liable to a fine, as well.

Laws related to certain trades also affect apprenticeship. Chapter 158 requires that all persons wishing to become journeyman barbers must undergo a three-year indentured apprenticeship, with a minimum of 288 hours of part-time school attendance annually, before they can apply for an examination as journeyman barbers. If the apprentice has already acquired certain perparatory training, the minimum part-time school attendance is reduced to 144 hours annually. Licensing is compulsory for barbers.

Candidates in cosmetology must be apprenticed for two years, with a minimum of 144 school hours annually, before they can apply for a license to practice the trade. However, these requirements are waived, if the candidate has completed a course, prescribed by Section 159.02, in a registered beauty school. The State Board of Health issues licenses, which are compulsory.

Chapter 145 demands a five-year indentured apprenticeship for all plumbers, with 144 hours of school attendance each year. The mandatory license is issued by the State Board of Health.

Finally, Chapter 125 of the Wisconsin Statutes requires that all persons intending to become watch-makers or watch repairers be indentured as apprentices. The board of examiners which issues the compulsory licenses in this trade is empowered to regulate the training of apprentices.

Footnotes to Chapter 2

1. Administrative files of the Apprenticeship Division, *op. cit.*

2. Commissioner of Labor Statistics, Bureau of Labor Statistics, *First Biennial Report* (Madison: Democrat Printing Co., 1884) p. 91.

3. *Ibid.*

4. W. F. Fairbairn, *Wisconsin Apprenticeship, Ancient and Modern,* unpublished manuscript dated October 21, 1943. Administrative files of the Apprenticeship Division, *op. cit.*

5. Letter from the Supervisor of the Apprenticeship Division, October 31, 1913, in reply to one from Mr. T. J. Neacy, illustrating apprenticeship conditions before 1911. Administrative files of the Apprenticeship Division, *op. cit.*

6. Commissioner of Labor, *op. cit.*, p. 91.

7. W. F. Fairbairn, *Wisconsin Apprenticeship...*, *op. cit.*

8. *Ibid.*

9. G. M. Haferbecker, *Wisconsin Labor Laws* (Madison: University of Wisconsin Press, 1958), p. 146.

10. W. F. Fairbairn, *Wisconsin Apprenticeship...*, *op. cit.*

11. Industrial Commission, "Apprenticeship Law," *Bulletin*, Vol. I, No. 4A (August 12, 1912).

12. G. M. Haferbecker, *op. cit.*, pp. 146-47.

13. Industrial Commission, *Historical Sketch of Wisconsin Apprenticeship: Trends and Present Status*, Bulletin No. 35 (Madison, 1948).

14. Industrial Commission, Apprenticeship Division, *Second Annual Report of the Apprenticeship Division* (Madison, 1918), p. 5.

15. *Ibid.*, p. 1.

16. G. M. Haferbecker, *op. cit.*, p. 147.

17. *Historical Sketch of Wisconsin Apprenticeship*, unpublished manuscript, January 8, 1948, no author given. Administrative files of the Apprenticeship Division, *op. cit.*

18. Industrial Commission, Bulletin No. 35, *op. cit.*, p. 1.

19. Letter from T. J. Neacy, the *Milwaukee Free Press*, June 16, 1912.

20. Letter from T. J. Neacy, the Milwaukee Free Press, October 27, 1913.

21. W. F. Fairbairn, Wisconsin Apprenticeship..., op. cit., p. 5.

22. G. F. Haferbecker, op. cit., p. 153.

23. W. F. Fairbairn, Wisconsin Apprenticeship..., op. cit., p. 5.

24. Letter from A. R. Graham to W. E. Hicks, Assistant for Industrial Education, June 19, 1914. Administrative files of the Apprenticeship Division, op. cit.

25. W. F. Fairbairn, Wisconsin Apprenticeship..., op. cit., p. 2.

26. Industrial Commission, First Report of the Apprenticeship Division (Madison, 1917), p. 2.

27. Ibid.

28. Ibid.

29. Industrial Commission, First Report..., op. cit., p. 2.

30. W. F. Fairbairn, Wisconsin Apprenticeship..., op. cit., p. 7.

31. Industrial Commission, Apprenticeship Division, Annual Report 1961 (Madison, 1962), pp. 1-2.

32. Industrial Commission, Bulletin No. 35, op. cit., p. 3.

33. Ibid.

34. Director of Apprenticeship, "Memorandum--G. I. Training in Wisconsin," July 17, 1952, p. 2., Administrative files of the Apprenticeship Division, op. cit.

35. Amendment to the Apprenticeship Law of 1911, May 17, 1943, Madison, Wisconsin, p. 2.

36. G. M. Haferbecker, op. cit., p. 151.

37. Amendment to the 1911 Act, 1959, Madison.

38. G. M. Haferbecker, op. cit., p. 144.

CHAPTER 3

THE MECHANICS OF APPRENTICE TRAINING IN WISCONSIN

The Wisconsin apprentice training program is officially administered by the Industrial Commission through its special agency, the Apprenticeship Division.[1] Its head, the Director of Apprenticeship, is assisted by a staff of fifteen.[2] It is his duty to see that the provisions of the law are complied with by all parties who participate in the training program, and to promote apprenticeship in the State. The director may initiate apprentice training in any trade that is considered apprenticeable. Either he or his staff--usually the field representatives--make personal visits to employers to persuade them to hire apprentices, after conditions in the given trade have been studied.[3]

An occupation is considered apprenticeable if it can be shown that a trainee will derive more benefit from such an arrangement than from one lacking indenture;[4] that at least one year is required to learn the occupation; and that the occupation requires mastery of a number of related processes requiring broad knowledge and experience and usually demanding a relatively long period of training.[5]

The over-all criterion is whether indenturing a youth for training in that particular occupation would enable him to learn more than any other way of doing it. "Industry and business generally have become so complicated that it is difficult to lay down any definite rules to follow in determining when an occupation is suited to the use of indenture. The test should be what is best for the learner; will an apprenticeship appointment afford him an opportunity for better and more varied training than would otherwise be the case; will the fulfillment of such an appointment enable him to more readily find employment after graduation; and will his increased earning ability easily offset sacrifice in wages he may have suffered as an apprentice."[6]

The procedure followed to intiate apprentice training in an occupation not yet included in the apprenticeable list is straightforward. The director holds public meetings to take evidence of the need for apprentice training in the trade from representatives of labor, management, and the interested members of the public. If there is general agreement that apprentice training is needed, he helps to form an advisory committee for that trade. With their cooperation, and after local, State, and/or national training standards are reviewed, a schedule of training is prepared. If both labor and management in the trade agree to the standards suggested, the trade becomes apprenticeable.

When an employer wishes to hire apprentices in an apprenticeable trade, the director or his deputies visit the establishment to ascertain if the facilities are adequate; he consults with both labor and management in the establishment; and the training periods are set, based on the experience of people in the establishment with training. Any related training available in the area is considered by both labor and management, and it is decided whether there is a need for additional facilities. Thus, both labor and management are consulted throughout the process.[7]

Theoretically, the number of candidates accepted for training in an apprenticeable trade depends upon the supply of and demand for journeymen in that occupation in a given labor market and time period,[8] which determines the stringency of the test used in candidate selection. If the demand for journeymen in that trade exceeds the supply of youths who wish to become journeymen, then the selection procedure is lenient. But if there is a waiting list for youths who wish to become apprentices, then fewer are accepted.

A youth who wishes to become an indentured apprentice may contact either the employer who may hire him, the union, the employment service, a vocational school, or the Apprenticeship Division of the Industrial Commission. The candidate is referred to the joint apprenticeship committee for that trade in that area, if there is one, which interviews him to determine if he is genuinely interested in learning the trade.[10] If he satisfies the committee, he is then referred to the nearest employment service or vocational school for testing. He also receives counseling, to ensure that he is making the right choice. The general aptitude test includes the following: intelligence test, verbal aptitude, numerical aptitude, spatial aptitude, form perception, motor coordination, finger dexterity, and manual dexterity (these are grouped as a mental maturity test, a mechanical aptitude test, a mathematics achievement test, and a manual dexterity test). The vocational interest test shows fields of interest and types of interest. (Over 200 specific special test batteries have been developed by the employment service.) The results are reported to the employer or the joint apprenticeship committee or to any other sponsor of the candidate. He is then interviewed again by the committee or the employer, to rewiew his determination to pursue the trade in the light of his test results. To a large degree, his performance on the various tests is a major criterion in the decision to accept or reject the candidate.

The general aptitude test battery is widely used throughout the State in the selection of candidates. However, in large metropolitan cities, such as Milwaukee and Madison, both it and a specific aptitude test battery are utilized.[11] Although their employment in the selection of apprentices has come about largely since World War II, both unions and employers are eager to use tests as a means of reducing turnover and raising the general level of quality of apprentices.[12]

When an applicant is accepted by the joint committee, he usually is hired by the employer or placed by the agency that sponsored him. Sometimes, however, he is not immediately hired, because no apprentice vacancy exists in the trade. An apprenticeship vacancy is determined by the ratio, agreed upon by labor and management in that particular trade, which sets the number of journeymen which should already be employed before an employer may hire an apprentice. This ratio is usually chosen by the joint apprenticeship committee, but in some cases, it is determined by union-management agreement at the local or national level, and the joint committee merely gives its approval (for a detailed discussion of this issue, see Chapter 4).

Where the joint apprenticeship committee is responsible for setting the ratio, it is supposed to periodically rewiew the ratio, in theory, at least, to see if there should be some adjustment to compensate for supply and demand in the given trade and labor market. The following factors are to be considered:[13] the number of journeymen leaving the labor market; the number of journeymen entering it from other labor markets; the present and future prospects for journeyman employment in that labor market; and other relevant factors, such as the rate of growth of the given trade or industry in that and adjacent areas. But to take into account all these factors requires such a sophisticated system of record-keeping and data analysis and interpretation of socio-economic considerations that the committees may not find it feasible. As a result, in practice, employers often claim that there are not enough journeymen in a given trade, while the unions may claim the opposite.

The Apprenticeship Division of the Industrial Commission does not usually become involved in setting the journeyman-apprentice ratio. Its interest in the matter is limited primarily to the question of whether or not conditions in the individual shop are such that indentured apprentices can properly learn the trade there.[14] Nevertheless, the Apprenticeship Division, together with the various local employment services, could be of considerable assistance to the local and/or area joint committees in assessing journeyman supply and demand in various trades and helping to maintain a journeyman-apprentice ratio that would correspond to the needs of the industries.

Finally, apprentices may not be employed immediately because, although the journeyman-apprentice ratio requirement is adequately fulfilled, qualified employers are unwilling to hire them.[15] This may happen when employers consider only their current needs or those of the immediate future, rather than the volume of work for the entire year and their long-run needs. In any event, whether or not applicants are hired for training after they are accepted into the apprenticeship program depends mainly on employers' readiness to hire them and the journeymen-apprentice ratio agreed upon by employers and unions.

Once the applicant finds employment, he and his employer must sign an indenture, for which purpose the sponsoring employer or committee obtains Form APP-7 from the Industrial Commission. This form contains the names of the parties to the contract; a schedule of wages to be paid to the apprentice; credit for the candidate's past experience, if any; and the total number of journeymen working in the firm or plant where the candidate is to receive shop training. The sponsor is given 40 days to send its recommendation to the Commission, which will not act until it has received the sponsor's report. If the employer or committee rejects the application, then the applicant may appeal to the Commission. If he is accepted, four copies of Form APP-7 must be filled out and signed by the sponsor and the apprentice: one for the Industrial Commission, one for the employer, one for the apprentice, and one for the vocational school where the apprentice will take his related instruction.

Every indenture must contain the following statements:[16] the names of the parties involved; the date of birth of the person indentured; a description of the trade, craft, or business which the apprentice is going to be taught; the time at which the apprenticeship is to begin and end; an agreement that a certificate will be issued to the apprentice at the completion of his indenture; the term of training stated in years or hours (which varies from trade to trade and from period to period, and is determined by the respective trade); school attendance required; a training schedule; compensation to be paid to the apprentice; and any special provisions. The last four requirements are discussed in some detail below.

The Apprenticeship Law States that the apprentice shall attend school four hours weekly, if his indenture is for two years or less, or for a total of 400 hours, if his indenture is for more than two years.[17] Related instruction is provided by the vocational and adult education schools, which are located in all Wisconsin cities having populations of 5,000 or more. They are equipped to provide adequate instruction in various apprenticeable trades. If a school does not have enough funds or enough apprentices to warrant full-time instructors in some trades, then it will utilize the services of circuit or traveling teachers, as they are commonly called, who visit the school on certain days each week throughout the school year. Apprentices who live in cities where there are no vocational schools either travel to the nearest school or take correspondence courses. If an apprentice has to travel to another city because the school in his area does not teach his trade, he must obtain consent from the local board of vocational education in his city. In this case, tuition fees are charged to the political subdivision from which he comes and not to the apprentice or employer.[18]

Apprentices receive wages from their employers for the hours they attend school, at the same rate as for their services in the shop. If an apprentice fails to attend school without a reasonably good excuse, then he is subject to a penalty of loss of compensation for three hours for every hour absent. In addition, apprentices do not get credit for high school attendance, except in special cases and only with the approval of the Industrial Commission. The over-all cost of instruction is borne by the State and local governments, for they provide classrooms, equipment, and the services of the instructors.

The indenture also contains a training schedule, which breaks down the term of training into many smaller periods, in each of which the apprentice will learn a particular phase of his trade. A detailed training schedule is to appear on page three of each indenture form, under "Exhibit A," to eliminate the practice of keeping the apprentice in a particular phase of his trade for longer than necessary.[19]

Another important provision in the indentue is the compensation to be paid to apprentices, based on a certain percentage of the prevailing wage rate of the journeymen in that occupation in a given labor market. "An apprentice wage scale is deemed adequate when, during the term of training, it averages 50 to 60% of the current journeyman rate. The indenture should provide for a graduated scale of progression in periods as approved by the Commission."[20] The Commission states further that in trades where collective bargaining on a community-wide or area-wide basis is common practice, the prevailing journeyman rate is that received by a greater number of journeymen in the area than any other. Ordinarily, the Commission will not approve a skilled rate for apprenticeship purposes more than 20 percent below the prevailing journeyman rate, but it reserves the right to make exceptions in controversial cases. Where collective bargaining is on the basis of an individual plant or establishment, the skilled rate is that specified in the bargaining agreement. Where establishments are not covered by a bargaining agreement, the skilled rate is set at that paid the greatest number of competent journeymen in the community, or, alternatively, whatever rate is deemed adequate by the Industrial Commission.

Thus, the compensation to be paid to apprentices is not specified by the Apprenticeship Law and is merely regulated by the rules of the Industrial Commission. The Commission's attitude toward apprentice wages is summed up as follows: "If the apprentice is given every opportunity to learn the trade properly and if he is kept steadily employed as a learner, the matter of wages becomes secondary."[21] In addition, the rate stated in the indenture is a minimum--the employer may pay more, if he wishes. This determination of wages as a certain percentage of the prevailing journeyman rate is of recent origin. Some old Exhibit A forms, dating back to 1917, show wage rates as specific sums.

The percentage determination of wage rates may create problems. An individual employer may be paying lower journeyman rates than other establishments in the community and may refuse to hire apprentices at wages computed according to rates paid to the majority of journeymen, rather than his own. In other cases, an area joint committee may cover both a metropolitan locality and small towns or rural areas. Such committees might find it difficult to recommend a journeyman rate that would do justice to the small town or rural employer.[22]

In addition to wages, any cash bonus the employer wishes to give his apprentice at the completion of training must be mentioned in the indenture. Usually, such a bonus will amount to $100 for a four-year indenture, $75 for a three-year one, and $50 for a two-year indenture. In the last case, the employer usually gives a kit of tools, as well.

Under "special provisions," the indenture must contain any time credit for the apprentice's past experience. If his previous experience is related to work ordinarily assigned to him in his trade, and if he can present written proof of this experience, then the Industrial Commission may approve his request. Any claim for such credit must be made by the apprentice at the time of his indenturing.

An indenture must also state the length of the probationary period, which is usually six months. During this time, either party may annul the contract for any reason, giving written notice to the Industrial Commission. Should either party wish to annul the contract after the expiration of the probationary period, the approval of the Commission must be obtained. Such consent is given only if it is clear that the fulfillment of the contract would create undue hardship for either party; otherwise, the contract remains in force.

The work hours allowed an apprentice vary with his age. If he is

18 or over, he may work the same hours as skilled workers in the same trade and establishment. If he is between 16 and 18, he is limited to a 55-hour work week--51 hours of work and hour hours of instruction. Compensation for overtime is to be one-and-one-half times the rate provided in the contract for regular time.[23] However, the apprenticeship manual adopted in 1956 by the Industrial Commission does not mention working hours. It should be noted that there are no rules and regulations regarding work on holidays or Sundays, the customary practices being followed.

Being laid off is bad for apprentices' morale, because they make sacrifices when they agree to work and learn for low wages and therefore may reasonably expect to be steadily employed throughout their term of training, but there are times when lay-offs are unavoidable. Where more than one apprentice is employed, lay-offs must be on the basis of seniority--last hired, first laid off.[24] If an apprentice is laid off for a period not exceeding 30 days in a calendar year, his indenture still is binding, and he is expected to return to work upon notice. If he is laid off for longer, he is then free to seek work elsewhere. However, it is customary not to hire any new apprentices until those who were laid off have been given a chance to return. Finally, if the bargaining agreement between the employer and his employees contains provisions regarding lay-offs, then they apply to apprentices, as well.[25]

At one time, the Industrial Commission held that apprentices may engage in any duties assigned to them when work is short,[26] to help avoid lay-offs, but the present apprenticeship manual does not include this. It also does not say whether the Industrial Commission would approve of employers asking their apprenticesto attend school several days a week when they are short of work. In Wisconsin, the custom of transferring as many laid-off apprentices as possible to other employers may help to provide continuous employment and training and maintain apprentice morale, but how effective this procedure is should be examined.

When an establishment is struck by its employees, it may not indenture new apprentices. However, apprentices already indentured are allowed to work, so long as conditions are such that they can continue to learn the trade, although they are not penalized if they abstain from work because of the presence of picket lines. The Industrial Commission acts as arbitrator in any dispute growing out of these circumstances.[27]

The apprenticeship manual adopted in 1961 does not spell out policies with regard to the status of apprentices who become ill and therefore abstain from training. In cases where there is no bargaining agreement between employers and employees, a tradition exists among employers to pay up to two weeks wages to apprentices who are sick. If an apprentice becomes permanently disabled, compensation is determined on the basis of wages he would probably have received after attaining the age of 21. Compensation for partial disability is set according to the rates stated in his indenture, plus the value of the related instruction he received as an apprentice.[28]

An apprentice has no clear-cut status in the union, and the practice varies.[29] He is free to become or not become a union member, but this freedom is limited. If there is a collectively bargained agreement between the union and the employer, the provisions of that agreement regarding apprentice membership hold good. The Industrial Commission has no rules on this matter.

Apprentice training may be severely affected by draft requirements during a war period, but currently, apprentices may be deferred from military service. In 1953, a Presidential Executive Order provided "that when an apprentice has had 1,000 hours or more of training in a critical occupation, or 2,000 hours or more in other essential occupations, he is eligible for deferment provided that the apprentice program has been in operation for a year or more with at least one apprentice in continuous employment."[30] The requirement that apprentices must have had a minimum of 1,000 or 2,000 hours, depending upon the occupation, may prevent many of them from benefitting from the deferment plan.

Proper supervision of training is one of the essentials of a sound apprenticeship program. The employer (or his representatives) has the ultimate responsibility here, since it is he who invests in the training of apprentices, but this is only an ideal. In practice, the employer may unwittingly neglect training or use the apprentice as a source of cheap labor. Hence, there is a need for supervision by someone who is not directly involved with apprentice training. To quote the Industrial Commission:

> It is of primary importance that specific responsibility for the apprentice's training be placed on someone who is qualified and in a position to direct the apprentice's work. This person may be the foreman, one of the journeymen, or the owner himself, but

the arrangement should be made known to both the apprentice and the person to whom supervisory responsibility is delegated. It is the policy of the Industrial Commission to have one of its representatives make a check with both the employer and the apprentice on any problems and on the apprentice's progress. 31

Footnotes to Chapter 3

1. See Chapter 8 for a detailed account of the function of the State agencies in apprenticeship.

2. Including an assistanct director, five supervisors, five field representatives, and four stenographers. See Chapter 8.

3. Industrial Commission of Wisconsin, *First Report...*, *op. cit.*, p. 4.

4. An indenture is an apprenticeship contract executed on standard forms issued by the Industrial Commission of Wisconsin.

5. Industrial Commission, *Apprenticeship Law with Explanations* (Madison, 1928), pp. 12-13.

6. *Ibid.*, p. 13.

7. Letter from the Director of the Apprenticeship Division to George Hagland, School for Workers, University of Wisconsin, Extension Division, Madison, December 9, 1963.

8. Minutes of the Graphic Arts Section of the North Central States Apprenticeship Conference, Indianapolis, Indiana, October 28-29, 1959, p. 3.

9. Annual Proceedings of the Wisconsin State Federation of Labor (Milwaukee, 1951), p. 92.

10. See Chapter 6.

11. A. W. Motely, "Recent Trends in the Test Selection of Apprentices," *Monthly Labor Review* (October 1953), p. 1068.

12. *Ibid.*

13. G. M. Haferbecker, *op. cit.*, p. 153.

14. Industrial Commission, *Apprenticeship Law with Explanations*, *op. cit.*, p. 11.

15. G. M. Haferbecker, *op. cit.*, p. 153.

16. Industrial Commission, *Apprenticeship Manual* (Madison, 1961) p. 21.

17. Industrial Commission, Apprentice Indenture, Form APP-7, p. 2.

18. Industrial Commission, *Apprenticeship Law with Explanation*, *op. cit.*, p. 22.

19. A compendium of these work schedules for various trades has been prepared by the School for Workers, Extension Division, University of Wisconsin: "Training Specifications, Apprenticeable Wisconsin Occupations (Madison, 1964).

20. Apprenticeship Rules, Industrial Commission Standards 85.04.

21. Industrial Commission, Apprenticeship Law with Explanations, op. cit., p. 29.

22. Minutes of the meeting of the State General Apprenticeship Policy Advisory Committee to the Apprenticeship Division, Proceedings of the 56th Annual Convention of the Wisconsin State AFL-CIO, Sheboygan, August 16-20, 1948, p. 384.

23. Industrial Commission, Apprenticeship Law with Explanations, op. cit., p. 7.

24. Industrial Commission, Apprenticeship Manual (Madison, 1956), p. 26.

25. Ibid., p. 27.

26. Industrial Commission, Apprenticeship Law with Explanations, op. cit., p. 15.

27. G. M. Haferbecker, op. cit., p. 153.

28. Industrial Commission, Apprenticeship Law with Explanations, op. cit., p. 31.

29. For detailed discussion of this issue, see Chapter 4.

30. Wisconsin State Federation of Labor, Report of the Standing Committee on Apprenticeship in the Proceedings of the 61st Annual Convention, Milwaukee, 1953, p. 73.

31. Industrial Commission, Apprenticeship Manual (1956), op. cit., p. 27.

CHAPTER 4

THE ROLE OF UNIONS

In the early days of their participation, during the nineteenth century,[1] unions tended to view apprenticeship as a "method by which employers could train swarms of boys, educate them with anti-union doctrines and then bring them into the factories to undermine wages and deprive union men of employment."[2] As a result, they called the early trade schools for training apprentices "scab hatcheries." They attempted to bring about "some regulation" of apprenticeship by insisting that union membership was open only to those who had served an apprenticeship.[3]

The participation in and attitude toward apprenticeship of unions depends upon the nature of the labor market, the conditions of employment, the nature of the industries from which they draw their membership, and the level of skill achievement of their members. Craft unions, such as those in the building and printing trades, have always shown more interest in apprenticeship than unions in the metal trades,[4] with the exception of the machinists' union.[5] This is because they wish to perpetuate themselves as an organization, to maintain skill level--the symbol of status and the basis for higher wages, and to control the supply of skilled workers.[6]

Unions adopt a number of measures for the purpose of maintaining skill levels and of restricting the supply of craftsmen. The former is accomplished by setting high training standards;the latter is achieved by limiting the total number of apprentices indentured through the journeyman-apprentice ratio and by restricting the flow of apprentices through maintenance of a longer training period and a rigid age limit for the start and completion of apprenticeship.[7]

With regard to journeyman-apprentice ratios, practices vary. They may be decided by the national unions, the district councils, or the locals. The ratios vary from occupation to occupation and also depend upon the location of the firm involved (see Table 4-1). As a strategy to limit the number of people trained in the trade, the journeyman-apprentice ratio is effective only when the union can control entry into the trade through "illegitimate" or "abnormal" means, such as transfers from other locals, direct admissions, and "backdoor entry." In addition, sources of training other than apprenticeship may also nullify the restrictive effects of the ratio.

Transfers are possible because of the inter-area mobility of skilled workers, especially in the building trades. Since rural locals tend to have lower standards than those in big cities, men admitted to rural locals with only rudimentary training may then migrate to big cities, where they are accepted for membership on a transfer basis during the peak season, when there is plenty of work available. In addition, where unions are weak, employers often hire non-union men, and the unions have to accept these men as members, if they are to organize the establishment. Once they are members, these men may migrate to more strongly unionized areas.

TABLE 4-1.

Journeyman-Apprentice Ratios Set by Wisconsin Unions

Occupation	Ratio	Occupation	Ratio
Bricklayers	8:2	Patternmakers	8:1
Carpenters	3:1[a]	Wireweavers	as high as possible
	7:1		
	10:1	Printing pressmen	n.a.
Painters	4:1	Photoengravers	10:1
Plumbers	1:1	Molders	8:1
Machinists	10:1	Steamfitters	1:1

a. To begin with.

Source: Constitutions and by-laws of the various unions and agreements.

Direct admission means acceptance as a union member anyone who finds a job, even if they have not gone through apprenticeship. In such cases, the business agent determines the qualifications of these men through a brief interview. This is known as "back door entry,"[8] and those who "steal the trade" in this way are called "Joe McGees."

Training other than apprenticeship may be had as follows: "a. Completion of part of formal apprenticeship; b. informal apprenticeship; c. learning the trade in a non-union sector of the industry or a related industry; d. vocational schools; e. and working one's way up from an unskilled or helper classification through a step by step process of 'stealing the trade.'"[9] As long as these so-called illegitimate paths and non-apprenticeship training means are open, the strategy of the journeyman-apprentice ratio[10] may not be effective.

Unions also determine the length of training and the minimum and maximum age limits for apprentices. A longer period of training limits the supply of skilled workers by helping to keep the apprentice at the non-journeyman level, as well as acting as a deterrent for prospective apprentices, especially in occupations with lower wage rates. It impedes the occupational mobility of labor,[11] but there seems to be little concern for this. Unions contend that the length of bound service, rather than superior skill, should constitute the basis for differential wages and exclusive rights to the trades by journeymen.

The periods of training set by various unions in Wisconsin are given in Table 4-2. In recent years, Wisconsin unions have successfully resisted attempts to reduce the length of training. The duration of training was decided upon by the unions years ago, when conditions were totally different. An examination of indentures entered into in the 'thirties and 'forties indicates that training periods have remained the same in almost all apprenticeable occupations.

TABLE 4-2.

Years of Training for Apprentices Set by Wisconsin Unions

Union	Minimum	Maximum
Bricklayers	3	4
Carpenters	4	
Stone polishers	4	
Painters	3	
Plumbers and pipefitters	5	
Ironworkers	3	
Machinists	4	
Patternmakers	5	
Wire weavers	4	
Printing pressmen	3 or 4	5

Union	Minimum	Maximum
Photoengravers	6	

Source: Constitutions and by laws of the various unions.

Union locals not only determine the number of apprentices allowed, they also set forth conditions under which apprentices will be allowed in a shop. For example, one bricklayers' local states that a contractor is entitled to an apprentice only if he has been in business for a year; and during the building season, the number of apprentices allowed will be increased at the discretion of the union.[12] A painters' local states that "no apprentice shall be granted to a contractor until such a time as he has been examined and passed by the apprenticeship committee,"[13] and that an employer is qualified to have apprentices only if he has been in business for "at least 8 months of each year."[14] The plumbers and pipefitters' union stipulates that an employer may hire an apprentice only if he employs one or more journeymen steadily.[15]

As Table 4-3 shows, some unions fix the minimum age for apprenticeship, others the maximum, and still others both.

TABLE 4-3.

Regulation of Apprentice Age Limits in Wisconsin Unions

Union	Minimum	Maximum
Bricklayers, masons	18	24
Carpenters	17	25
Painters		26
Steamfitters	18	
Union workers	18	30
Machinists	16	23, 27a
Patternmakers	16	

Union	Minimum	Maximum
Wire weavers		21
Printing pressmen	16	
Photoengravers	18	25

a. In special cases.

Source: Constitutions and by-laws of the various unions.

Efforts by the unions to control apprentice training is a mixed blessing. Certainly, it helps to maintain high training standards, which is to the public's eventual benefit. On the other hand, it may lead to a shortage of skilled labor in those trades and those areas where unionization is strong and control of apprenticeship very rigid. It may also bring about featherbedding, as the result of excessive zeal in maintaining strict jurisdiction. And above all, absolute adherence to rigid age limits and maintenance of longer training periods than necessary may prevent adaptability to economic and technological changes.

In cases where clauses governing these matters are not included in either the international constitition or the by-laws of the locals, they become subject to bargaining. A separate provision for apprenticeship in a collective agreement is an indication of the union's claim that it is subject to bargaining and does not fall entirely under the employer's prerogative. Accordingly, in 1944, the Wisconsin State Federation of Labor prepared an apprenticeship clause to be used by all affiliated organizations in their bargaining agreements,[16] which contains the following: names of the parties (company and union) to the agreement; purpose; admission requirements for apprentices; ratio of journeymen to apprentices in the particular occupation; duration of the training program; supervision of apprentices; credit for previous experience of the apprentice; tools, shop schedules, shop training records, and progress records; seniority apprentice wage rate schedule; apprenticeship committee; and grievance procedures for apprentices.

A typical example of such an agreement is here extracted from that between the Allis-Chalmers Co. (West Allis Works) and the United Automobile Workers Local 248. Section A of Article XlX sets forth the purpose, procedure, functions, and organization of the joint apprenticeship committees in the plant; Section B indicates the limit set to the number of apprentices to be indentured in each of the various trades: "The number of apprentices in the first two thousand (2,000) hours of each of the below listed courses excluding those resuming training following return from military leave of absence shall not exceed: Blacksmith--1; Production electrician--10; Brass molder--1; Iron molder--13; Machinist--39; Maintenance and production fitter--1; Plate and structural--2; Tool and die makers--13; Weldment fitter--3; Machine repair--2; Millright--2." It is also stated that the joint apprenticeship committee in the plant should be consulted before indenturing any new apprentices beyond these quotas.

Section B of Article XlX gives a minimum age limit of 18 and a maximum of 26 for apprentices and requires that candidates must be high school graduates. Section C deals with the procedures for handling complaints and grievances concerning training schedules and classroom curricula. Section D sets forth training schedules and related instruction curricula. Section E deals with the length-of-service seniority of apprentices. Finally, Section F concerns the application of other provisions of the agreement.[17]

In contrast to this agreement, the agreement between the Louis Allis Co. and Local 1131 of the International Union of Electrical Radio and Machine Workers contains only a very brief statement on apprenticeship training. Article XI, Section 81, reads as follows: "It is recognized that for certain highly skilled trades, apprenticeship training is necessary. The company shall have the right to employ in the machine shop, welding and winding occupations a reasonable number of indentured apprentices to serve for a period of time and at the rates designated by the Wisconsin Industrial Commission for this particular plant. These apprentices shall be included in the bargaining unit."[18] Thus, although in some agreements all questions with regard to apprenticeship are spelled out in detail, in others they are not. In the latter case, the local joint apprenticeship committees work out the details. Clearly, in both cases, apprentices are included in the bargaining unit.

There remain those cases where apprentices are not included in the bargaining unit until they reach a certain level of proficiency in their trade. For example, the 1958 agreement between the Chain Belt Co. and the United Steelworkers Local 1527 contains such provisions, as the following excerpt shows:

a. Indentured apprentices are excluded from the bargaining unit.

b. Apprentices in the production and maintenance apprenticeships

> ill become members of the bargaining unit *at the beginning of the final year of their apprenticeship* (emphasis supplied). They are then eligible for membership in the union and are covered by all the terms of the current agreement between the company and the union, except that their rates of pay and those conditions of employment specified in the apprentice indentures are not subject to negotiation by the union.
>
> c. The number of production and maintenance apprentices will not exceed 3.5 percent of the total number of employees in the bargaining unit, unless the company and the union agree to increase the number. When, however, an apprentice returns from military service under conditions which entitle him to reemployment, he may be reemployed by the company even if his reemployment raises the number of apprentices above the maximum.
>
> d. Upon completion of apprenticeship, each such apprentice will receive a rate of pay no lower than the minimum rate for the labor grade to which he is assigned.
>
> e. Production and maintenance apprentices, once they have completed the first three months of employment with the company, will receive full seniority credit for all their services as apprentices in accordance with the provisions of Section 5 of the current agreement between the company and the union. Similarly those employees of the company who have served as apprentices during past years and those currently serving apprenticeships are entitled to full seniority credit for past service as apprentices.
>
> f. Production and maintenance apprentices are considered as members of the seniority unit to which they are assigned and when a reduction in the working force becomes necessary, they will be handled in the same manner as other employees in the seniority unit...
>
> g. Effective April 28, 1958, the rates of all apprentices will be increased by $0.09. This increase will be incorporated into the regular rate schedule for the apprenticeship program.[19]

Thus, regulation of apprenticeship through collective bargaining varies, depending on the union and the company and sometimes on the nature of the industry, as well. Wherever there are joint apprenticeship committees, they help to determine the provisions regarding apprentices. Such committees seem more common in the building trades than in metal trades, and in addition, the constitutions of most building trades' unions spell out apprenticeship regulations. As a consequence, most agreements between employers and unions in the construction industry contain only summary statements about apprentice training. For example, the 1964 agreement between the Madison Employers Council, Building and Construction Contractors Division, and Loacal 314 of the Central Wisconsin District Council of the United Brotherhood of Carpenters and Joiners of America contains only the following statement with regard to apprenticeship:

> All apprentices shall be indentured in accordance with Chapter 106 of the Wisconsin Statutes and any amendments thereto and all apprenticeships shall be governed by the apprenticeship rules of the Industrial Commission. The limitation of apprentices for any one employer shall be as directed by the Advisory Apprenticeship Committee to the Industrial Commission (emphasis supplied). Any changes adopted by the apprenticeship committee shall be part of this contract. 20

Similar statements may be seen in other agreements. The 1964 contract between the Painters, Decorators, and Paperhangers Local 802 of Madison and the Madison Chapter of Painting and Decorating Contractors of America, Article IV, Section I, states: "no apprentice shall be granted to a contractor until such time as he has been examined and passed by the Apprenticeship Committee, composed of two contractors and two journeyman painters. All apprentices shall be governed by the State Apprenticeship Standards for the painting and decorating industry..." It also contains detailed statements regarding the apprentice ratio, however: "No apprentice is to be granted to any employer unless he employs four (4) journeymen at least eight (8) months of each year, unless special permission is given by the Executive Board."[21]

The 1964 agreement between Plumbers Local 167 and the Madison Association of Plumbing Contractors, Inc., merely says, "apprentices shall be indentured to the Madison Area Plumbers Joint Apprenticeship Committee in accordance with and subject to the terms and provisions of the Apprenticeship Standards approved by the Industrial Commission of the State of Wisconsin..."[22] It says nothing at all about the journeyman-apprentice ratio, although apprentice wages are spelled out. In this respect, it resembles the carpenters' agreement. The agreement of the electrical workers union is very specific about the journeyman-apprentice ratio, but omits other details.[23]

On the other hand, agreements in the printing industry go into more detail. The 1964 agreement between the Milwaukee Printing Pressmen and Assistants' Union No. 7 and the Franklin Association of Milwaukee contains detailed provisions with regard to the joint apprenticeship committee, selection standards, ratio of apprentices, wage scale for apprentices, overtime, etc.[24] This is also the case with contracts of Photoengravers Local 19 of the I.P.E.U. of North America, with the Associated Photo Engravers of Wisconsin (1962) and the Journal Company (1957).[25]

In addition to regulation through constitutional provisions and collective agreements, organized labor can also exercise a certain degree of control over apprenticeship by bringing pressure on those who are involved in the apprentice training program. The Wisconsin State Federation of Labor does this through its annual apprenticeship conference and through its lobby in the State Legislature. Not only an indicator that organized labor is interested in apprentice training, the conference is also a forum where it can give vent to its views, complaints, and criticisms regarding apprenticeship.

One of the anxieties most often expressed at the conference is that of falling wages as the result of an over-supply of skilled workers: "some of the delegates...expressed fears that the large number of apprentices...would tend to break down wages and working conditions."[26] Skilled labor is also apprehensive about the possible use of apprentices as cheap labor and, to discourage this, insists that employers pay certain minimum wages for apprentices' services.[27]

In one convention, the President of the Wisconsin State Federation of Labor said: "on the apprenticeship side there is a fear that the younger people would be encroaching upon the security of older members of the organization and have withheld a constructive apprenticeship program, and they have been rather skeptical about training new people for fear of losing their own job."[28] The concern with job security makes "some unions (in Wisconsin) have the attitude that in the event of a lay-off apprentices must be laid off first regardless of the working agreement;"[29] it also causes certain building trades' unions to oppose the reduction of the training period.[30]

The conference is also used by organized labor to focus attention on issues where the officials of the Apprenticeship Division of the Industrial Commission have, in its opinion, acted against its interests. In 1955, the Industrial Commission's actions regarding the apprenticeship manual were criticized;[31] and the conference protested against an alleged attempt by the Apprenticeship Division to bypass the jurisdictional claims of established joint apprenticeship committees and to create new committees.[32] It also charged that the Apprenticeship Division ignored the advice of joint committees and failed "to cooperate with labor...for the past several years something has been radically wrong with the leadership emanating from the office of the Director of Apprenticeship."[33] This is an example of the vehemence with which organized labor defends its rights and interests whenever it thinks they are jeopardized. In addition, the conference passes resolutions, thereby immortalizing its charges. In a 1956 resolution, it condemned the director of the Apprenticeship Division for indenturing apprentices involving more than one trade without consulting state committees, together with his tendencies "to make opinions on standards set by joint apprenticeship committees."[34]

An examination of the validity of these criticisms falls beyond the scope of this paper; they are cited only for the purposes of showing the eagerness with which organized labor attempts to maintain control over the apprenticeship program. If vigilance is the price of freedom, then certainly, organized labor in Wisconsin seems to be vigilant.

Footnotes to Chapter 4

1. Paul E. Bergevin, op. cit., p. 16.
2. W. McLaine, New Views on Apprenticeship (New York: Staples Press, 1948).
3. Paul H. Douglas, op. cit., p. 315.
4. F. F. Foltman, "Apprenticeship and Skill Training--A Trial Balance," Monthly Labor Review (January 1964), p. 28.
5. Ibid.
6. K. Leipman, Apprenticeship: An Inquiry into Its Adequacy under Modern Conditions (New York: Humanities Press, 1960), p. 145.
7. Unions may adopt restrictive measures to limit the supply of journeymen through means other than the apprenticeship program, but we are not concerned with those here. For details, see ibid.
8. George B. Strauss, "Apprenticeship: An Evaluation," in A. M. Ross, ed., Employment Policy and the Labor Market (Berkeley: University of California Press, 1965) p. 319.
9. Ibid.
10. A study should be made to determine the number of workers who attain journeyman status in Wisconsin through these illegitimate means.
11. K. Leipman, op. cit., p. 17.
12. Constitution and by-laws of Bricklayers' Local 13, Madison, 1952. Article VII, Section IV.
13. Constitution of the Brotherhood of Painters, 1960, Section 105a.
14. Working Agreement, Painters' Local 802, Madison, Section 2a.
15. Constitution of the Plumbers' International, 1961, Section 163.
16. Report of the Proceedings of the 52nd Annual Convention of the Wisconsin State AFL-CIO (1944), op. cit., p. 339.
17. Agreement between Allis-Chalmers Manufacturing Co. (West Allis Works) and Local 248 of the UAW, 1955-58, pp. 67-81.
18. Agreement between the Louis Allis Co. and the International Union of Electrical, Radio, and Machine Workers, June 1, 1959, p. 29.

19. Agreement between the Chain Belt Co. and the United Steelworkers Local 1527, 1958, pp. 50-51.

20. Union Master Agreement, Central Wisconsin District Council of Carpenters, Madison, 1964, p. 10.

21. Agreement between Painters Local 802, Madison, and the Independent Contractors, May 1964, p. 6.

22. Agreement between Plumbers Local 167 and the Madison Association of Plumbing Contractors, Inc., 1964, pp. 3, 6.

23. Agreement between the IBEW Local 159 and the Individual Contractors, 1961, p. 7.

24. Scale of Wages and Working Agreement between the Milwaukee Printing Pressmen and Assistants' Union No. 7 and the Franklin Association of Milwaukee, 1964, pp. 23-25.

25. Agreements of the Associated Photo Engravers of Wisconsin, 1962, and The Journal Company, 1957, with the Milwaukee Photo Engravers Union No. 19, I.P.E.U. of North America, pp. 19-22 and 12-14, respectively.

26. Proceedings of the 57th Annual Convention of the Wisconsin State AFL-CIO, Eau Claire, August 15-19, 1949, p. 264.

27. Proceedings of the 58th Annual Convention of the Wisconsin State AFL-CIO, Oshkosh, August 21-25, 1950, p. 143.

28. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO (1962) op. cit., p. 1.

29. Address by Ed Herzberg, Chairman, Policy Advisory Committee, Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO, Wausau, January 28-29, 1958, p. 1.

30. Proceedings of the 59th Annual Convention of the Wisconsin State AFL-CIO (1951), op. cit., p. 93.

31. Apprenticeship Conference, Proceedings of the 63rd Annual Convention of the Wisconsin State AFL-CIO, Milwaukee, 1955, pp. 83-84.

32. Ibid., p. 85.

33. Ibid., p. 83.

34. Proceedings of the 64th Annual Convention of the Wisconsin State AFL-CIO, Superior, August 20-23, 1956, p. 113.

CHAPTER 5

THE ROLE OF EMPLOYERS

Qualified youths may be available for training; unions and journeymen may be willing to cooperate; vocational schools may have all the facilities required to provide related instruction; and the government may pass good laws regarding apprenticeship--yet all this is of no value if employers are unwilling to hire apprentices for training. The employers must pay for related instruction; they must provide for practical shop training; and they must ultimately employ the apprentices who have completed training. A preference on their part for workers who have had apprentice training, rather than those who have learned their trade haphazardly, would be of great importance in encouraging apprenticeship. To quote the director of the Apprenticeship Division of the Industrial Commission, "...the key to increasing the number of apprentices is through the employers."[1]

The answer to the question of whether employers should train apprentices is certainly "yes." Apprentice training may help to avoid bottlenecks in the supply of skilled labor, and this is important in keeping wages down and expanding production. The failure to train enough skilled workers to meet future as well as present needs can be much more damaging to industry than any possible temporary surplus.[2] But in actual practice, most if not all employers seem to have little interest in training apprentices, even to meet their own requirements. They apparently believe that they can get skilled labor whenever they need it,[3] and instead of shouldering the responsibility for training, like to hire those trained by others.

Such an attitude toward training is common in other countries, as well. In the United Kingdom, according to Margaret Croft, employers tend "to think purely in terms of their own minds and their preference for recruiting skilled men trained elsewhere at somebody else's expense. 'Why should we take on apprentices?' They say, 'We have always been able to get men who have served their time at Blank's.' "[4]

The apprenticeship activities of that minority of employers who would willingly train apprentices depends on a number of factors: the nature of their industry, the size of their firm, the prospects for expansion, etc. Small firms may not have adequate facilities--whether machinery or personnel--to provide all-around shop training, although this limitation can be overcome by rotating apprentices among different participating employers. Or they may lack an adequate number of journeymen to fulfill the journeyman-apprentice ratio requirements. Above all, the magnitude of training costs is not justified in the case of small firms. The cost of training is said to be "the greatest single deterrent" in the United Kingdom,[5] and this seems to be true in the United States, as well.[6] Here, small firms claim that training is too expensive and prefer to go to the labor market to find the craftsmen they need at an acceptable price. However, small firms were interested in training apprentices when the Federal government subsidized part of the costs involved.[7] It is interesting to note that a survey among Wisconsin employers confirms the thesis that cost is a major deterrent in training apprentices (see Chapter 17).

On the other hand, large firms often have all the necessary facilities to conduct a sound apprenticeship program, both machinery and personnel, and training costs may pose less of a problem for them. In addition, it is easier for them to dovetail the work of apprentices with regular production work, to avoid the dislocation of production schedules. However, large firms may prefer to conduct their own training programs, free from government regulations and interference, so that they can gear their particular training program to meet their own special needs. They feel there is nothing to be gained from registering an apprenticeship program with a State or Federal bureau, but plenty to lose, in terms of excessive record-keeping.[8]

Attitudes toward apprentice training vary in different trades. Employers in construction and the graphic arts show relatively greater interest than those in mass production industries. In the former, even small and medium-sized firms may engage in apprentice training, whereas only large firms in the latter participate.[9] Among other reasons, the need for skilled craftsmen is relatively lower in mass production industries.

In any event, employers have traditionally been apathetic toward apprentice training, arguing that unions influenced and controlled apprenticeship and thus ruined good employee training programs. The National Association of Manufacturers held that union limitation of apprentice training was hostile to industrial education. At the beginning of this century, the NAM's Committee on Industrial Education denounced the "inequities of the union apprenticeship regulations" and advocated that the unions' power over apprenticeship be crushed.[10]

During the second decade of this century, however, employers' attitude toward apprentice training began to change from one of hostility to one of tolerance. They favored the formation of vocational schools and compulsory education for those over 14 in industry. In fact, they cooperated with the American Federation of Labor in working for the passage of the Smith-Hughes Act in 1917, which gave federal aid to state projects for vocational education.[11]

What of employers in Wisconsin? Did they oppose apprenticeship, or support it wholeheartedly? Or were they indifferent? While it is difficult to generalize on the basis of the few facts available to us, they may be used to illustrate the attitude of employers.

The Apprenticeship Division of the Industrial Commission conducted caual surveys among employers in a few Wisconsin cities during the 1910's. Employers in Beloit (1917) were not interested in training apprentices, because the Apprenticeship Law was considered unfavorable; industrial conditions were unfavorable; past experience with apprenticeship was unsatisfactory; and finally, they did not believe that a man could learn to operate more than two or three machines. These opinions were expressed by four leading metal trades employers and a shoe manufacturer.[12]

In 1914, Fond du Lac employers gave the following reasons for their failure to participate in apprenticeship programs: Wisconsin's

Apprenticeship Law aimed at training all-around mechanics, who were not needed; employers would like to train specialists; other employers did not train apprentices, so why should they; and work in hand was too meager and uncertain to warrant entering into a long contract with a beginner.[13]

In Janesville, the following opinions were expressed: the apprenticeship contract was unfavorable; apprentices working next to those not apprenticed became dissatisfied and quit because of wage differences between them; the apprenticeship contract was unjust, because it bound two parties, even if they were dissatisfied; business was not big enough to train apprentices; the shop needed only a few mechanics, and the nature of their work did not require apprentices; and the contract was unfavorable to the employer.[14]

Kenosha employers (1914) stated that they needed only cheap labor; their type of production did not require skilled mechanics.[15] In Manitowoc, the following reasons for not participating were given: verbal contracts were preferable to written contracts; the Apprenticeship Law imposed a burden on employers; qualified boys were not available at the low wages paid; and specialization in industry made the apprenticeship system unnecessary.[16]

These opinions may not represent the views of all employers or even of the majority of employers at that time. Scientific survey methods and techniques were not used to obtain them, and, with one exception, the records do not reveal who these employers were. Nonetheless, the findings may be indicative of basic attitudes toward Wisconsin's apprenticeship program, particularly in the case of the two most frequently occurring criticisms: that the Apprenticeship Law was unfavorable, and business conditions were poor. Lesser reasons for non-participation were: interest only in training specialists, not all-around mechanics; the dissatisfaction of apprentices with low wages; lack of qualified boys; and the employer's questioning why he should train when others did not. To compare these findings with the attitudes and opinions of Wisconsin employers who participate in the apprenticeship program at present, see Chapter 17.

Other factors besides basic attitudes are important to the success or failure of the apprenticeship program, especially the number of employers who participate. If there are many employers in the State who have the potential to train apprentices, then participation by only a few indicates that something is wrong, just as participation by many implies a healthy program. However, it should be remembered that an increase in the total number of employers involved need not necessarily mean an increase in the total number of apprentices; it may be that larger firms are training fewer apprentices, while many small firms, training just one or two apprentices, have joined the program.

However, increases in the number of apprentices have accompanied increases in the number of participating employers in the past. In 1919, there were 112 participating employers in Wisconsin, training 1,108 apprentices; during 1932, when only 50 employers participated, there were 3,258 apprentices. By 1940, 800 employers were training 3,175 youths. Participating employers rose to a peak figure of 5,000 in 1950, and the number of apprentices in the program was 7,977. In 1961, employers involved in apprenticeship had declined to 2,000, training 4,414 apprentices. Finally, in 1963, participating employers rose to 2,600, and apprentices numbered 4,162.[17]

As of 1961, some 24,000 Wisconsin employers had the potential to train apprentices, but only 2,000, or 8.2 per-cent, participated in apprentice training.[18] The details of why the majority of employers are not interested in training apprentices, in the opinion of those who do participate in the program, may be seen in Chapter 17, but here we will list only those reasons most often cited.

Even now, more than fifty years after its original passage, employers seem to be dissatisfied with the Apprenticeship Law. It is often argued that an employer's right to hire and fire is restricted, if not eliminated; "...under the present law, an employer cannot hire an apprentice and after he completes his training fire him and in turn hire another apprentice."[19] In addition, the law's provision that the employer must pay the apprentice for the time he spends in school while receiving related instruction is held to be unjust. (Wisconsin is the only State having this requirement.)

Training costs are also often cited by employers. There seem to be no data available on the cost of training apprentices in different trades and in different industries, and data on the cost of training in one firm for one occupation, in one geographical area, during one period may be of only limited use. The development of information of a broader sort would be of great value for purposes of research and policy making.

Employers in the metal trades were and are dissatisfied with the present Apprenticeship Manual, especially with Parts II and III, which include policies and procedures for joint apprenticeship committee programs and for company or individually sponsored apprenticeship programs.[20]

In addition, there is the apathy of the employers toward the development of skills among lower level employees, which is, in fact, a national problem and not unique to Wisconsin. The National Manpower Council wrote, in 1955:

> Employers have taken their acquisition of skilled workers somewhat for granted, and have devoted most of their attention to other areas of training. One such area is supervision and foreman training, which concentrates on such subjects as human relations, communications and conference leadership. Of twenty-two talks delivered at the American Society of Training Directors Conference held in Milwaukee during May 1954, only one concerned apprenticeship. None of the others dealt directly with skill and technical training. In a recent American Management Association Conference entitled, "Training in Depth," there was also no coverage of this subject, although nine topics were discussed. 21

One of the reasons for the general indifference toward apprenticeship is said to be the mobility of apprentices after training, and this fear is greater when an employer pays for the related instruction as well as shop training, as in Wisconsin. The National Manpower Council wrote that employers were reluctant to accept the idea of training programs, because "workers' mobility causes employer resistance to investment in the programs and many contractors are reluctant to pay for related training."[22] Data on the mobility of Wisconsin apprentices during and after training are not available. What information is available is of limited use, because it tells merely how many former apprentices reached higher positions, such as foremen, within the company to which they were apprenticed, not how many started apprentice training, how many completed it, and how many stayed with the company afterwards.[23]

Union interference is also often cited by employers as one of the reasons for lack of participation. The experience of the Apprenticeship Division of the Industrial Commission lends support to this assertion. "The Industrial Commission, through its chairman and through the Director of Apprenticeship, has held a series of trial meetings around the state, and there seems to be a little bit of doubt in the minds of management as to whether they want to sit down in a program with labor."[24] And one employer has said: "Employers disagree with labor as to who should have the responsibility to select apprenticeship candidates, union or management. There is a cleavage of opinion on this between management and union...(There is) conflict between union and management in connection with the direction of the daily, weekly and monthly training program, of apprenticeship committees, departmental supervisors, company personnel managers and training directors as to the proper assignment of responsibility for making operational decisions in the direction of apprenticeship training...If an apprentice wants out, he is free to terminate the indenture; if the training requirements of the staff are not met, then the Industrial Commission can terminate; the union is free to terminate the indenture if the general plans are not met by the apprentice; however, when an employer wishes to terminate the indenture, it is generally fought with arguments and threats and made generally a matter far out of proportion to its importance in the general scheme of things."[25]

While these remarks by one employer need not necessarily reflect the views of all Wisconsin employers, they are illustrative of the trend of their thinking. How do the employers who do participate in apprentice training feel about the Wisconsin program? What are their reasons for not taking on more apprentices than they do? What are their suggestions for improving the program? The answers to these questions may be found in Chapter 17.

Footnotes to Chapter 5

1. Speech by the director of the Apprenticeship Division of the Industrial Commission of Wisconsin, Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO, (1962), *op. cit.*, p. 2.

2. Margaret Croft, *Apprenticeship and the "Bulge"* (London: Fabian Society, 1960), p. 14.

3. R. H. Hagemeyer, *An Investigation of Factors Considered in the Selection of Apprentices by Manufacturing Companies in Michigan*, unpublished Ph.D. dissertation, Wayne State University, 1961, Dissertation Abstract, July 1961, pp. 124-25.

4. Margaret Croft, *op. cit.*, p. 16.

5. *Ibid.*

6. R. H. Hagemeyer, *op. cit.*, p. 124.

7. F. F. Foltman, *op. cit.*, pp. 31-32.

8. *Ibid.*, p. 31.

9. *Ibid.*

10. Paul H. Douglas, *op. cit.*, pp. 323-24.

11. *Ibid.*, p. 326.

12. Unpublished manuscript, administrative files of the Apprenticeship Division, *op. cit.*

13. Letter from Mr. W. D. Immel to Mr. W. E. Hicks, Assistant for Industrial Education, June 19, 1914. Administrative files of the Apprenticeship Division, *op. cit.*

14. Report by H. C. Buell, Superintendent of Schools, Janesville. Administrative files of the Apprenticeship Division, *op. cit.*

15. Report by Mr. Tarbell to Mr. W. E. Hicks. Administrative files of the Apprenticeship Division, *op. cit.*

16. Letter from Mr. Weisend. Administrative files of the Apprenticeship Division, *op. cit.*

17. Source for participating employer figures: 1919--Administrative files of the Apprenticeship Division, *op. cit.*; 1961--*Milwaukee Sentinel*, June 18, 1961; quoting Mr. Charles T. Nye, director of the Apprenticeship Division; all others were furnished by the

director of the Apprenticeship Division during an interview.

Sources for apprentice figures (which relate to total active indentures at the end of the year cited): 1940, 1950--Administrative files of the Apprenticeship Division, op. cit.; 1932, 1961, 1963--Mr. Harold T. Aspin, assistant director of the Apprenticeship Division; 1919--computed by calculating the rate of growth between 1917 and 1921.

18. Speech by the director of the Apprenticeship Division, quoted in the Milwaukee Sentinel, June 18, 1961.

19. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO (1958), op. cit., p. 1.

20. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO, Madison, January 31-February 1, 1956, p. 1.

21. National Manpower Council, Improving the Skills of the Nation (New York: Columbia University Press, 1955), p. 103. See "Industry Training Effort in Improving the Work Skills of the Nation," by Karl R. Kuznze.

22. Ibid., p. 141.

23. See Apprenticeship Division, "Project No. 25: A Company's Survey: How Effective is Apprenticeship?" Apprenticeship Bulletin (1962).

24. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO (1962), op. cit., p. 1.

25. Speech by Robert L. Grover, Vice President, Snap-On Tools Corp., Kenosha, Minutes of the Annual Apprenticeship Conference of the Wisconsin State AFL-CIO, Wausau, January 31 - February 1, 1961, p. 8.

CHAPTER 6

THE ROLE OF JOINT APPRENTICESHIP COMMITTEES

As noted before, industrial good will is the philosophical foundation of the Wisconsin apprenticeship program. The assumption is that the cooperation of both labor and management is essential for the success of any program which involves them both. Since apprenticeship is such a program, their cooperation is secured through the establishment of committees consisting of representatives of both. Although several kinds of committees, functioning at different levels, exist, they are all commonly known as joint apprenticeship committees.

But whether they are general advisory committees, trade advisory committees, or area and/or local joint apprenticeship committees, they are all purely advisory, and always have been.[1] Neither the Apprenticeship Law nor any other law of the State of Wisconsin gives any kind of administrative authority to them--in fact, the Apprenticeship Law does not even mention such committees.[2] Whatever authority or power they have has been delegated to them by the Industrial Commission.

Joint committees were active as early as 1908. A twenty-five man committee, including some educators, is said to have sponsored the bill which became the 1911 Apprenticeship Law. A General Advisory Committee to the Industrial Commission, at first consisting of twenty-four members, was active between 1913 and 1932 and then ceased to function during the Depression (see Chapter 8). After helping, through its subcommittee, to prepare the changes introduced in the Apprenticeship Law in 1915, the committee was reduced to eight members: three represented labor; three represented employers; one was the director of a vocational school; and the other was the State Supervisor of Apprenticeship.

This committee was reactivated in 1947, at the request of the Industrial Commission, and became known as the General Policy Advisory Committee. It consisted of ten members, five representing labor and five from among employers. The primary function of this committee was "to assist and counsel the Industrial Commission on the practical application of the apprenticeship law and to recommend legislative revisions, if any, and when deemed necessary."[3] It helped the Industrial Commission in the preparation of the Apprenticeship Manual approved on July 17, 1956.

At present, the functions of the General Policy Advisory Committee are stated to be: "1. To advise the Industrial Commission and the Apprenticeship Division...of industry version of changes desired...for greater industry cooperation with the Apprenticeship Division of the Industrial Commission. 2. To simplify, clarify...and obtain broader uniform understanding of the Apprenticeship Division of the Industrial Commission. 3. To assist local...area...state committees in their problems with the Apprenticeship Division of the Industrial Commission. 4. To secure full cooperation of management and labor on apprenticeship activities within all industry in Wisconsin. 5. To create harmony and understanding...on apprenticeship in management...and labor...and apprenticeship division of the Industrial Commission. 6. To create a bigger and better apprenticeship program...with greater skill for the journeyman mechanic."

Thus, the General Policy Advisory Committee may have an important role to play in the promotion of apprenticeship programs, despite its advisory nature. It is supposed to have contact with industry, labor, and local joint committees, to arrive at an understanding of their problems regarding apprenticeship, and then to act as their spokesman. Policy changes, when and if needed, must be brought to the attention of officials and law-makers. Much depends upon the keenness and sensitivity of the committee itself. A committee that is alert to needed changes can be of great help in improving the apprenticeship program in the State.

Next are the State-wide trade committees, which were formed as early as 1918, and are also purely advisory in nature. Their main function is to draw trade standards for apprentice training which, if accepted, will be adopted by the Industrial Commission. There are twelve such trade advisory committees in the State,[4] which means that those trades have State standards for training. State trade committees, and consequently State-wide training standards, exist in almost all the building trades, whereas most of the metal trades have no such committees, and local shop training standards are common.

The influence on apprenticeship of State-wide training standards should not be underestimated. Uniform standards help to avoid poor training and misunderstanding regarding training matters. "...state committees are important because there is need for the development of more uniform standards to guide the local committees in the different parts of the state. There is a need for closer liason between the trades and the various state agencies which can be best obtained through a state committee...and a state committee can encourage extension of good apprenticeship practices into all parts of the state...the efficiency of the local joint apprenticeship committees depends upon the vigor of these state committees."[5]

In 1950, however, charges were made that some of these committees did not function very effectively. They failed to furnish leadership to area and local joint apprenticeship committees;[6] some failed to hold meetings for more than a year at a time.[7] They were negligent in their work, delegating it to others. As a result, they failed to properly review a candidate's application before indenture; they failed to give adequate follow-up and examination of each apprentice; they failed to demand up-to-date related instruction by men capable of giving it; they failed to give local and area joint committees expert advice on apprenticeship; they failed to see that apprentices were continuously employed; and finally, they failed to indenture apprentices to employers who could provide competent training.

There is no data available on the actual functioning of these committees. They are under no obligation to provide information as to the frequency of their meetings or to furnish copies of their proceedings to a central agency, such as the Apprenticeship Division. Under these circumstances, it is very difficult to make any generalizations regarding their effectiveness.

Finally, there are the area and/or local joint apprenticeship committees, again with members representing both labor and management. An area joint committee has jurisdiction over several neighboring cities, a whole county, or several counties, whereas a local joint committee covers only one locality. Area-wide joint committees seem to be more common in the building trades, primarily because of the predominance of area-wide collective bargaining in the construction industry, whereas local joint committees or shop committees are common in manufacturing. The area-wide joint committees in the building trades help set uniform apprenticeship standards in a given area, while the local or shop committees in manufacturing concern themselves neither with State-wide nor even with area-wide standards. Most occupations in the building trades are highly skilled, and both journeymen and employers may evince greater interest in maintaining skill standards. In contrast, most jobs in manufacturing are less skilled, and interest in maintaining skill standards, and therefore control over apprenticeship, is less intense among both employees and employers in these industries.

Again, these area and local committees are primarily advisory bodies; they have no authority to either approve or cancel indentures, nor can they issue diplomas when apprentices complete their training. Their main job is to see "that the right person is indentured to the right employer, and that the training is what it ought to be," and the importance of this cannot be overstated. The Industrial Commission has stated: "...what a trade or industry can do for itself is everything that needs doing. If the Commission had five times as much authority as it now has it still could not achieve as good apprenticeship results locally as can an active committee."

The key role played by local and area committees can be seen from a list of their functions:

> 1. To see that apprentices engaged in the industry are properly indentured. 2. To establish local or area standards. 3. To establish recommended qualifications of employers and apprentices. 4. To recommend under what conditions apprentices may be employed. 5. To pass upon each new apprenticeship...that is the committee's most important function... 6. To develop standard application forms. 7. To make recommendations for approval or disapproval (of apprentices) to the Commission. 8. To keep a record of every apprenticeship within its jurisdiction. 9. To make a periodic check-up on every apprenticeship...here is where a committee could be of service. 10. To encourage parties to indenture to bring their complaints and grievances before the committee for adjustment. 11. To assist in the transfer of apprentices from one employer to another when it is necessary. 12. To determine time credit for past experience (to apprentices who claim it). 13. To certify graduate apprentices... 14. To make recommendations to proper authorities when reporting violations of the laws, regulations or terms of apprenticeship agreement. 15. To present to the state committee any suggestions for the improvement of the apprenticeship program. 16. To forward to the apprenticeship division of the Industrial Commission copies of the minutes of each meeting...this is an important duty of the local or area committee. 9

Thus, these committees have many important functions to perform, and the success or failure of local apprenticeship training depends to a large extent upon how active they are. But the committee members serve without any pay for their time. They elect their own chairman and secretary; they call and run their own meetings, where and when they see fit. It may be that too much is asked of them for nothing, for the results, if they do not function effectively, can be devastating: apprenticeship laws may not be amended as needed; poorly qualified boys may be indentured; apprenticeship standards and related instruction may become out-dated; apprentices may lose interest and quit the program.

To quote the State AFL-CIO, "We must reemphasize the point that where active joint committees are operating the chances of an apprenticeship failure or cancellation are less than in those areas where such committees are not operating effectively."[10]

If joint apprenticeship committees are so important to the whole scheme of things, certain questions arise. Have they fulfilled their role? What are their achievements? How effectively do they function? How vigilant are they in protecting the rights and privileges of apprentices? How keen are they in seeing that the apprenticeship program operates well in the areas under their jurisdiction? These questions can be answered only if certain data are available: (1) the exact number of joint area and local committees in the different trades between 1911 and 1964; (2) the total number of meetings held by these committees; and (3) the proceedings of these meetings. But the data are scarce and incomplete; the Apprenticeship Division kept no records on these matters until after 1961. Thus, there is only room for conjecture and educated guesses.

From the material that is available, it seems that there has been an increase in the number of committees (see Table 6.1). Their number almost doubled between 1939 and 1946, although the increase has been slower since then. Whether or not there are enough local committees can be decided only with reference to the number and distribution of apprentices over the State. Although there has been an increase in the number of committees, there has been a decrease in the number of apprentices in all trades at the same time. Mere numbers may not mean as much

TABLE 6-1

The Number of Joint Apprenticeship Committees, Various Years

	Date or year	All trades	Building trades only	Others
1.	December 31, 1939	113	76	37a
2.	June 30, 1946	253		
3.	July 1, 1947	278		
4.	1948	295		
5.	1954	312		
6.	1958	164	140	24
7.	1960	169	145	24
8.	1963	219	190	29

a. Of which 7 are specified as being in the metal trades.

Sources: Line 1--Industrial Commission, First Report, op. cit. Lines 2, 3, and 4--Report of the Apprenticeship Committee, 54th, 55th, and 56th Annual Convention Proceedings of the Wisconsin State Federation of Labor (1946, 1947, and 1948), respectively. Line 5--Report of the Apprenticeship Conference, 1956, p. 2. Lines 6, 7, and 8--These figures were supplied by the director of the Apprenticeship Division of the Industrial Commission.

as the functional effectiveness of these committees: theoretically, at least, a few effectively functioning committees are more useful than a large number of inactive ones.

The formation of new committees is not easy; it involves securing the cooperation of both labor and management. In some cases, established committees may oppose the formation of new committees, even if the established committee involved has jurisdiction over an unwieldy area. For example, when the Waukesha area plumbers wished to organize their own joint committee, the State Director of Apprenticeship could not form it, because the already established Milwaukee committee, whose jurisdiction included Waukesha, raised objections.[11]

Established committees may also oppose the formation of new committees which include non-union journeymen. According to resolutions of the 1955 and 1961 Annual Apprenticeship Conference, the formation of local joint committees with non-union journeymen (in Waukesha, Washington, and Ozaukee Counties) would not "...adequately nor realistically represent the spirit and purpose of the apprenticeship program as it was perceived by its founders." Similarly, they may object to the formation of committees including non-union employers.

Hence, in practice, the presence of local union members, or at least the unionization of members of a given trade, is a prerequisite for the formation of new committees. In addition, according to a study made by the Bureau of Apprenticeship and Training of the U.S. Department of Labor, "There was a strong relationship between size of local unions and their participation in joint committees...Most of the areas having a local union with more than 100 journeymen reported active joint apprenticeship committees. In sharp contrast, only about one-fourth of the unions having fewer than 50 members were participative in a joint apprenticeship committee. Among middle-sized unions (50-99 journeymen members), about one-half were participative in a joint apprenticeship committee."[12] Although this study was limited to the masonry trade, it may be true in other trades, as well. An investigation of the relationship between the distribution and size of locals and the number and effectiveness of joint apprenticeship committees in Wisconsin might be helpful to those who wish to improve the apprenticeship program.

Finally, many communities which could support joint apprenticeship committees do not have them, whether because of the causes outlined above, or because of a general apathy on the part of the people concerned.

Where such committees do exist, many of them do not function effectively. According to the State AFL-CIO, the Industrial Commission had recognized some 300 committees by 1949, and "far too many of them were paper committees only...They are derelict in their duty; they meet but once a year; they fail to clear by joint action each apprentice; they fail to call each employer before them to explain the responsibility of training; they fail to act as an independent trade group; they fail to provide the best possible selection of persons entering the trade (emphasis suppled) by direct interrogation of the applicant and employer, supplemented by written tests; they fail to check often the progress of the apprentices in their areas and they fail to maintain perfect records."[13] Such paper committees may have been in existence as late as 1960: "...about 10 or 15 years ago there was established in the state a joint apprenticeship training committee for their industry (sheet metal) and up until 1960 they had very few meetings. In 1960 the committee was activated, new members were appointed from labor and management and this new committee was trying to promote the apprenticeship program."[14] There is no way of knowing in which trades such committees were abundant, but wherever they are, they can adversely affect the image of the apprenticeship program in the minds of both the public and apprentices.

Why do committees become ineffective and inactive? They may lack both the personnel and the finances necessary to fulfill their many duties, especially if they must determine the supply of and demand for apprentices in the various trades. It is equally difficult for them to forecast any changes in supply of and demand for skilled journeymen. In addition, the "uncertainty of economic conditions (may) make it difficult for joint apprenticeship committees to foresee how many apprentices will be needed."[15]

The most serious handicap seems to be that these committees have no information on the total number of apprentices in their trades and in their jurisdiction; they did not even know the type of training given to their apprentices or the terms of apprenticeship; finally, they did not even know whether or not apprentices received proper related instruction, if any.[16] Here, state trade committees, local joint apprenticeship committees, local employment services, employers, and the Apprenticeship Division can all work together closely to determine supply of and demand for skilled labor. The state trade committees can be of particular help, because their stature enables them to secure the necessary information on these matters.

It is no exaggeration that the need to reactivate the local committes already in existence is urgent. To quote the director of the Apprenticeship Division: "...one of our real problems is the fact that we are woefully short of local apprenticeship standards...one of the big projects will be to revitalize a number of our local committees..."[17]

Footnotes to Chapter 6

1. Industrial Commission, Apprenticeship Manual (1961), *op. cit.*, p. 15.

2. *Ibid.*

3. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO, Green Bay, January 27-28, 1959, p. 1.

4. The following trades have state trade advisory committees: carpenters, electricians, glaziers, painters and decorators, plumbers, sheet metal workers, steamfitters, trowel trades, barbers, cosmetologists, watchmakers, and bakers.

5. Report of the Standing Committee on Apprenticeship, Annual Proceedings of the Wisconsin State AFL-CIO (1951), *op. cit.*, p. 98.

6. *Ibid.* (1952), pp. 86-87.

7. *Ibid.* (1949), p. 285.

8. *Ibid.* (1950), p. 280.

9. Industrial Commission, Apprenticeship Manual (1961), *op. cit.* Only the last point does not appear in the 1956 manual as well.

10. Annual Proceedings of the Wisconsin State AFL-CIO (1950), *op. cit.*, p. 280.

11. Minutes of the Wisconsin State JAC (plumbers) Meeting, May 1, 1954, pp. 1-2 (unpublished).

12. U.S. Department of Labor, Bureau of Apprenticeship and Training, Apprenticeship in Masonry Construction, Bulletin T-151 (Washington, 1961), p. 5.

13. Annual Proceedings of the Wisconsin AFL-CIO (1949), *op. cit.*, pp. 266-67.

14. Speech by Mr. Robert Schneider, Executive Secretary, Sheet Metal Contractors Association, Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO (1961), *op. cit.*, p. 5.

15. Annual Proceedings of the Wisconsin State AFL-CIO (1949), *op. cit.*, p. 82.

16. *Ibid.*, p. 89.

17. Speech by the director of the Apprenticeship Division, Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO (1962), *op. cit.*, p. 2.

CHAPTER 7

THE ROLE OF VOCATIONAL SCHOOLS

Vocational schools occupy a major position in modern apprenticeship programs, especially in the indentured systems. These programs are modern only because of the related instruction provided by the schools. The 1911 Legislature realized the importance of giving an apprentice theoretical knowledge, as well as shop training, and hence their Apprenticeship Law required the apprentice to attend classes in related instruction.[1]

There are two primary functions performed by vocational schools in the apprenticeship scheme. Besides providing related instruction, they assist the selection of candidates by administering various test batteries to them, if asked to do so. In addition, they help employers and student apprentices to understand apprenticeship.[2] Their first responsibility, however, is the provision of related instruction, and its importance cannot be overstated.

As noted before, related instruction furnishes the "why" as well as the "how" of the apprentice's trade, and the need for this is more urgent than ever before. Technological changes introduce new materials, new products, and new processes, and journeymen need new and more varied technical knowledge and skills.[3] Apprentices "must have more than a smattering of scientific and technological training. They must be able to hold tolerances and close specifications that were undreamed of even 10 years ago. The ability to interpret complicated blue prints will be a must. The ability to combine manual dexterity with understanding of scientific principles will be expected..All this points to a need for greater and broader training in the basic principles of the trade."[4] Actually, related instruction has a second objective, although it receives much less attention: to provide apprentices with non-technical knowledge designed to help them become good citizens and responsible employees.

It is repeatedly stated that related instruction is "the most important segment of training," and that the real distinction between adequately and poorly trained journeymen lies in their having knowledge which can only come from related classroom instruction.[5] If this is true, then the quality of such instruction assumes greater significance. A periodic evaluation of subject matter, materials, and equipment used in the classroom is necessary to maintain high standards: "we must reexamine our entire program with an eye not only to transmitting certain necessary physical skills, but also to broadening and improving the amount and quality of the related training our apprentices receive."[6]

Who should do this periodic re-evaluation? In Wisconsin it is done by the vocational schools themselves, in cooperation with school advisory groups known as Joint Advisory Committees (not to be confused with the joint apprenticeship committees advisory to the Industrial Commission). "These committees consist of equal representation of employers and employees of a particular occupation, together with representatives, as consultants, from such public agencies as may be deemed advisable. The local director of vocational and adult education or his representative is responsible for calling and conducting such local meetings. Upon written request of an employer and an employee member, the director or his representative shall call a meeting of the advisory committee." There are committees at the state and area level, as well as the local. All are responsible for providing "advice and counsel" in matters regarding related instruction.[7]

As of 1963, there were 63 vocational and adult education schools in the State, including those called technical schools, but 25 of them (1961-62) had no apprentices enrolled. These schools will provide related instruction, however, if the need arises. The largest number of apprentices are enrolled at the vocational technical and adult education school at Milwaukee, which has facilities for instruction in many apprenticeable trades. Officials of the Milwaukee school, on their own initiative, have undertaken pilot research projects to improve the services the school offers and the methods of instruction. However, the results of their efforts have not been made available to other schools, which might have benefitted from such experiments, had better communication existed.

In 1960-61, the Milwaukee vocational school accounted for 28 percent of all enrolled apprentices in the State, and the Madison school for 11 percent. Omitting these two, the remaining schools with 100 or more apprentices enrolled (Racine, West Allis, Kenosha, Eau Claire, Sheboygan, Green Bay, and Beloit) accounted for 30 percent. Nine schools had 50 to 99 apprentices, or 21 percent of the total; five, with 25-49 student apprentices, accounted for 6 percent; and the remaining eleven, with less than 25, provided for 5 percent of the total (see Appendix Table V-2)

Apprentices attend vocational schools one full day a week (eight hours), the day varying according to the trade and the area they are in, to learn the principles of their trade. The total number of hours of class attendance is different from trade to trade. When an apprentice attends school, he is given a token by the school authorities, which he must present to his employer as proof of his presence in class. This enables the employer to determine the wages payable for those hours the apprentices spent in school.

Classroom instruction is usually given by experienced journeymen, i.e., those who have "served as apprentices and journeymen and are thereby qualified to give the maximum in related information to apprentices."[8] However, in cases where they are not available, persons with inadequate trade training and experience may be employed, and instruction may suffer. On the other hand, experienced journeymen may not always be good teachers. Nonetheless, organized labor generally opposes the use of "persons with academic background," and in 1946, the Convention of the State AFL-CIO passed a resolution requesting that the State Board for Vocational Education revise the trade teacher qualification rules to permit competent tradesmen to qualify as teachers, by granting college credits for their training and industrial experience.[9] Still, such men may not be available in sufficient numbers, and even if they are, they may not be competent teachers unless they are given training in methods of teaching to adults.

For apprentices who live and work in areas where either there is not a vocational school or the local school does not have the required facilities and/or teachers, instruction is provided by "circuit teachers" who travel around the State. If there are not enough apprentices to justify the salary and travel costs of a circuit teacher, "local" resources, i.e., highly competent journeymen, are utilized for training.[10] Circuit teachers have been provided since 1925, although no figures are available on their numbers between 1925 and 1942. In 1944, there were 16 such teachers, and in 1948-49, the peak period for apprenticeship in Wisconsin, the figure rose to 25, later declining to the World War II level of 16 (see Appendix Table V-4). At present, there are 17 traveling teachers, servicing a circuit of seven or eight vocational schools in different cities. They hold day-time classes for apprentices and evening classes for journeymen.

Finally, to instruct those apprentices to whom the services of a vocational school, a circuit teacher, or "local" resources are not available, the Industrial Commission may approve a home study course for them, so long as their employers take full responsibility for training them.

Information on how many apprentices receive classroom instruction from the regular vocational schools, how many of these utilize the service of circuit teachers, and how many complete the requirement for related instruction through home study courses is essential to the improvement of related instruction. But it is scattered in different agencies of the State. If it could be filed in a central agency, such as the

Apprenticeship Division of the Industrial Commission, further research on related instruction and its improvement would be possible.

Other problems exist. Those apprentices who live and/or work in big cities generally receive their related instruction from competent teachers in well-equipped schools. But is the instruction given to those who live in remote areas of the State or in cities which do not and cannot support well-equipped schools equally good?

At present, vocational schools are permitted to give instruction to those who live outside the limits of the city in which the school is established only if the institution or municipality or school district from which they come contacts the school directly and agrees to reimburse the costs of instruction. But, as was reported in the 1954 Apprenticeship Conference of the State AFL-CIO, some school boards in some cities refused to pay such fees to other schools when their apprentices were receiving instruction.[11] Thus, some apprentices were denied what would presumably have been better related instruction.[12]

Another problem is keeping instruction methods and equipment up-to-date, which is the responsibility of the Joint School Advisory Committees. But these committees take a real interest in this matter only if they represent the trades, and this is not always the case. In 1948, the Wisconsin State AFL-CIO asserted that the vocational school advisory committees did not represent the group they were supposed to represent.[13] If this is still true, then up-dating instruction may still be an unsolved problem.

Finally, available funds may be inadequate. Federal, State and local governments share the costs of related instruction, although the State appropriation for all vocational education (including related instruction for apprentices--see Chapter 8) is small: "...the state vocational schools receive the smallest share of state support appropriated to a publicly supported educational activity" in the State of Wisconsin.[14] Federal funds available for providing related instruction to apprentices are authorized by the Smith-Hughes and the George-Barden Acts. In addition, funds were made available under the National Defense Education Act in 1958, although amendments to this act restricted their use for the training of "highly skilled technicians essential to the national defense." The largest share of support for related instruction is paid from local mill tax funds (see Appendix Table V-5). The director of the State Board of Vocational Education has reported that a decrease in federal aids or an amendment to the State law covering mandatory mill tax provisions for vocational and adult education would have a serious effect upon the related instruction program.[15]

Footnotes to Chapter 7

1. Oswald L. Harvey, Apprenticeship in Wisconsin 1940 (Washington: Federal Committee on Apprenticeship, 1941).

2. G. M. Haferbecker, op. cit., p. 150.

3. G. L. Grieber, "Related Instruction for Apprentices," Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO (1956), op. cit.

4. J. R. Stevenson, "The Growing Emphasis on Skill," Carpenter (December 1959), p. 7.

5. Martin P. Durkin, National Assignment Memo No. 39 (no title) (Washington: U.S. Department of Labor, Bureau of Apprenticeship and Training, July 12, 1954), p. 3.

6. Ibid.

7. For a detailed description of their functions, see State Board of Vocational and Adult Education, The Organization and Function of Advisory Committees, Administrative Series Bulletin No. AD-101 (Madison, 1963).

8. G. L. Grieber, op. cit.

9. Proceedings of the 54th Annual Convention of the Wisconsin State AFL-CIO, Superior, August 19-23, 1946, pp. 267-68.

10. G. L. Grieber, op. cit.

11. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO, Fond du Lac, January 19-20, 1954, p. 3.

12. Report of the Standing Committee on Apprenticeship, Proceedings of the 57th Annual Convention of the Wisconsin State AFL-CIO (1949), op. cit., p. 83.

13. Proceedings of the 56th Annual Convention of the Wisconsin State AFL-CIO (1948), op. cit., p. 394.

14. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO, Wisconsin Rapids, January 29-30, 1963, p. 7.

15. G. L. Grieber, op. cit.

CHAPTER 8

THE ROLE OF GOVERNMENT

Some decades ago, Professor John R. Commons wrote: "The opportunity for training boys and young men to go to the top was never greater. The difficulty is in getting an all around practical training and in holding up the boys to the work in spite of the temptations of high wages for unskilled labor. Hence, only the state with a firm hand is in a position to meet the situation, both to bring the employer to a sense of his responsibility and the boy who is lucky enough to have an apprentice opportunity to hold on until he has fully learned not merely the routine work, but all branches that will open up a career for him in the future."[1]

The role of government "in bringing the employer and the apprentice to a sense of responsibility" has even greater relevance today than in 1918. First, government is no longer a neutral in the nation's economic activities; it has a positive role, and one of its primary goals is the achievement of full employment, or at least the elimination of unemployment. Second, government itself has become the nation's largest employer, requiring the services of many different types of labor, and consequently, it has a positive role to play in the labor market.

In its efforts to attain full employment, government may act in either a negative or positive fashion. The negative aim is to eliminate unemployability, and one of the chief causes of unemployability is lack of skill. "Unemployment in the United States occurs in not one, but many forms, stemming from different causes, affecting groups and individuals in different ways. Yet the problems have common elements and are affected by the many influences which operate together in our intricate and interdependent society: By the disadvantage of poor schooling and lack of skills...the skilled and well-educated worker in general continues to do well in the nation's labor market and shares in the nation's affluence. However, for the relatively uneducated and unskilled portion of the labor force...employment opportunities are deteriorating."[2]

Hence, one of the important steps government can take in its fight against unemployment is to help people develop the skills required in today's economy. Technological changes have unquestionably reduced the demand for unskilled and semi-skilled workers;[3] modern industry needs workers with high degrees of skill. These skills can be developed among young people by expanding the educational and training opportunities available to them and by motivating them to take full advantage of these opportunities. Apprenticeship is an obvious means of doing this.

But who is responsible for skill training? Does industry have full responsibility? Or does it share it with government? Insofar as formal training is concerned, industry has undertaken this responsibility to only a limited extent. "Formal training...as prearranged systematic programs of instruction was provided by fewer than one in five establishments--primarily the large companies. Furthermore, much of the training was limited to specific occupations (often supervisory) or to special subjects...programs for development of skills...of workers have been uncommon in industry except where a shortage of desired skills or levels of competence cannot be met by other means. Some firms are also reluctant to invest in formal training programs because trained workers may readily move to other employers."[4] Given these facts, government must take steps to encourage apprentice training among employers. What these steps have been and are today will be discussed shortly.

In addition, government is "the nation's largest single employer of manpower;"[5] even though the demand for skilled labor generated by government expenditure at all levels cannot be stated in quantitative terms, it is surely high, because of increased expenditures (and multiplier effects) in both defense projects and non-defense projects, such as public construction. "The manpower requirements generated by (public construction projects)...involve occupations ranging from civil engineering to typing and unskilled labor, but they are most notable for their impact on skilled craftsmen, who constitute a much larger proportion of the work force in construction than in any other major industry. It is, in fact, through public construction that government programs have their chief effect on employment opportunities for craftsmen."[6]

Originally, government's interest in apprentice training was motivated by non-economic reasons: it was not to encourage skill development, nor to fight unemployment at the root, nor to prevent bottlenecks in the supply of labor, but to protect the rights and privileges of the minors who became apprentices (see Chapter 2), i.e., for humanitarian purposes. Apprentices were considered to be merely learners; they were part of neither management nor labor, and their bargaining capacity was almost nil. Their status was at the mercy of both unions and employers. To avoid this and attendant problems, government undertook to regulate apprenticeship from a neutral position, as a means of securing the cooperation of both employers and unions.[7] This explains the beginning of State participation in Wisconsin, at least, if not in other places.

In the course of time, the role of the State in apprenticeship expanded: it attempted to provide facilities for technical education and create conditions that would encourage industry to undertake apprentice training. Privately run schools provided training, but there were cases where the high costs involved prevented youths of average means from enjoying the benefits of these training programs. Moreover, the number and location of private technical schools were limited; they were often inaccesible to young men and women who wanted to become apprentices.[8] The private training provided by large companies usually opened its doors only to the relatives of their own employees, and generally, training was provided only in a few occupations or groups of occupations. There circumstances gave impetus to greater State participation.

Government primarily renders two services to modern apprenticeship programs in a free society. First, it engages in promotional activities, in order to encourage larger numbers of youths and employers to participate in apprentice training programs. It can help to maintain an equitable relationship among employers, unions, and apprentices. It can see that apprentices receive sound training in their chosen occupations, by standardizing fundamental conditions for learning and refusing to indenture apprentices to employers who do not possess certain minimum facilities. It also provides direct financial incentives to apprentices, although this has been done only intermittently, as in the case of World War II and Korean War veterans. And it provides indirect aid, through its support of vocational and technical education.

The second important function of government in apprentice training is to provide supervision of apprentices during their training. This is essential, because bad working conditions, unsolved grievances, and dissatisfaction may encourage apprentices to quit training.

The State agency that administers the Apprenticeship Law in Wisconsin, as previously noted, is the Apprenticeship Division of the Industrial Commission of Wisconsin. The Apprenticeship Division tries to create a favorable climate for apprenticeship and maintain contact with all who are involved in indentured apprentice training, through public meetings and addresses, personal conferences, and the dissemination of literature. Further, it tries to persuade employers of the advantages of apprentice training to business and industry; it tries to create interest among the youth of the State through vocational and other high schools; it prepares the classification of apprenticeable trades and determines which trades are apprenticeable; it provides indenture forms, to obtain uniformity; it sees that contracts are equitable and conform to the Apprenticeship Law; and finally, it supervises apprentices during their training.

Apprentice supervision assumes especial importance in trades where joint committees either do not function effectively or do not exist at all. Production pressure in the shop may lead to negligence of apprentice training, or apprentices may be unintentionally denied the right kind of opportunity for experience and learning. On the other hand, the employer may be forced to bear undue losses and damages through the irresponsible behavior of apprentices. All these may create difficulties in enforcing the training schedule. The Apprenticeship Division acts as arbitrator in solving these problems.

In addition, the Apprenticeship Division maintains records of all indentures, as well as the minutes of the meetings of the local, joint, and state committees related to apprenticeship. (Here, it should be noted that it has in its records the minutes of joint area committee meetings only since 1961.) It also issues a monthly bulletin, giving statistical information on apprenticeship status. Until 1920, it also published a monthly, The Wisconsin Apprentice; its discontinuance is unfortunate, since it might have more impact than a bulletin containing only statistics.

Finally, the Apprenticeship Division issues certificates to apprentices upon completion of their training. At present, certification is accomplished in various parts of the State and at different times. While this may be convenient for the apprentices and employers concerned, it has little publicity value. It would surely help apprenticeship promotion if the ceremony could be held just once a year an in one particular city or town.

When compared to other agencies of the Industrial Commission, the Apprenticeship Division, with its director and fifteen staff members, including stenographers (see Chapter 3), has few personnel, and its budgetary allocation is not very big. However, its expenditures have been steadily increasing since 1935-36, when they were $6,993.00. In 1945-46, its expenditures were $15,398.00, more than double the figure of ten years before, but its transactions more than trebled in the same period (see Appendix Table S-1). In 1955-56, its expenditures were $43,464.00, with a corresponding growth in the number of its transactions. In 1962-63, expenditures rose to $92,918.00; however, transactions had declined.

The activities of the Apprenticeship Division can be measured only in terms of the total number of transactions it undertakes, which include its approvals, completions, and cancellations of contracts and the inspections carried out by its officials. Data on contracts are available, but those on inspections are not; thus the figures given here do not include inspections by the officials of the Division. In 1935-36, total transactions were 726; this figure rose to a high of 10,136 in 1946-47 and declined to 2,643 in 1962-63.

The cost per transaction[9] of the Apprenticeship Division ranged between 54 and 96 cents before World War II; during the war it varied from 41 to 72 cents. It reached an all-time low, 16 cents, in 1946-47 when transactions reached an all-time high, 10,136. Since then, although transactions have fallen off steadily (with the exception of one or two years), expenditures have been rising, resulting in an increase in cost per transaction: it was $1.10 in 1954-55, and, after a temporary decrease, rose to an all-time high in 1962-63, $3.52. These figures are only suggestive, however, since the total number of transactions are calculated according to calendar years, while total expenditures are based on fiscal years.

In addition to general economic benefits--the availability of skilled workers, the elimination of unemployability among the youth of the State, etc., apprenticeship training also brings a certain monetary return to the State, in the form of taxes paid by apprentices. During 1964, it is estimated, State apprentices paid an approximate total of $840,000 in State taxes on their wages, which were $23,000,000.[10] The total cost borne by the State for related instruction during 1964 was estimated at $325,000, and the annual budget of the Apprenticeship Division was $100,000. Thus, the State's total expenditure in connection with the apprenticeship program was approximately $425,000, or only a little more than 50 percent of the total contribution made by apprentices to the State in the form of taxes. It would seem that the State's expenditures on the apprenticeship program are more than justified.

The Federal government also participates in Wisconsin's apprenticeship program, through the Bureau of Apprenticeship and Training of the Department of Labor. The Bureau does not train apprentices; it merely persuades employers to develop apprenticeship programs, with or without union participation. It helps in the formation of joint apprenticeship committees, when an industry desires joint participation, and it helps management and labor develop apprentice training standards.

The Bureau has five offices in Wisconsin, in Madison, Racine, Oshkosh, La Crosse, and Milwaukee, and its six representatives cover the entire State. They work with and, for all practical purposes, for the Industrial Commission in the promotion of apprenticeship under Wisconsin law; in fact, they have been authorized to represent the Industrial Commission in promotional activities. However, their role is purely promotional: they do not administer Wisconsin laws.

In addition to the services rendered by the Bureau, the Federal government also gives financial help in the form of aid for vocational education (see Chapter 7).

Finally, local governments participate in apprenticeship training in Wisconsin by providing facilities for related instruction in their schools for vocational and adult education. The amount of local aid for related instruction varies from city to city (see Appendix Table V-5), depending upon the kind of instructors--part-time or circuit teachers--and equipment they have. The larger the city or governmental unit, the greater the local contribution to related instruction.

The State government evinces great interest in and responsibility for the promotion of apprenticeship programs. However, the number of promotional and inspection calls carried out by the Apprenticeship Division is limited by their small staff. Since inspection is one of the essential conditions for a sound apprentice training program, inadequacy in this area may adversely affect the image of apprenticeship in the minds of both the public and apprentices. Hence, it would seem to be important to increase the Division's budgetary allocations.

Footnotes to Chapter 8

1. John R. Commons, Statement in The Wisconsin Apprentice, Vol.I, No. 2 (April 15, 1918) p.1.

2. U.S. Department of Labor, Manpower Report to the President and Report on Manpower Requirements, Resources, Utilization, and Training (Washington, 1964), p. 24.

3. Ibid., p. 61.

4. Ibid., p. 71.

5. Ibid., p. xvii.

6. Ibid., p. 166.

7. Industrial Commission, Second Report, op. cit.

8. The Industrial Commission, Bulletin, Vol. I, No. 4A, op. cit., pp. 238-39.

9. Transactions include only approvals, completions, and cancellations; if data on the number of inspections could be included, then the cost per transaction would presumably become smaller.

10. Memorandum from the Director of Apprenticeship to the Chairman of the Industrial Commission, January 20, 1965, pp. 1-2.

PART II. AN ANALYSIS OF APPRENTICESHIP TRANSACTIONS IN WISCONSIN

CHAPTER 9

THE BUILDING TRADES

Construction is one of the fastest growing industries in the nation.[1] The occupations included under the category of building trades are mostly crafts involving a high degree of skill and dexterity achievable only through long training and experience. But employment in the building trades is seasonal, which deters planning for the future. In addition, "heavy construction--such as industrial, commercial, and institutional projects--is becoming less and less labor intensive".[2] Prefabricated components are delivered to construction sites, instead of the work being performed there, which reduces markedly the man-hours of employment available to apprentices, since journeymen alone have the right to erect these components. Besides, this limits the functions required of a trade and is therefore not conducive to training.[3]

General contractors subcontract their work to specialty labor contractors, who perform only their segments of the project and prefer to maintain journeymen thoroughly familiar with each other. This also eliminates the need for apprentices. Residential construction is in a similar situation: custom-built housing is declining; there is less scope for varied tasks and greater need for only specialized workmen; and as a result, there is less scope for training all-around apprentices.[4]

Nonetheless, construction faces a greater need for apprentices. It is estimated that by 1970 the industry will require two million additional skilled workers, because of rapid growth in construction activities. In addition to expansion of the industry itself, the prevalence of pension plans in the building trades is expected to result in somewhat earlier retirement for many workers, which will contribute to an increased demand for future skilled construction workers. "The level of construction activity is expected to increase 40 to 50 percent during the present decade because of population growth and shifts and because of heavy outlays on public works. To handle this extra workload the construction industry by 1970 will need 1.2 million more skilled workers than it now has. In the meantime, it will also have to find 1.1 million new workers simply to replace the skilled mechanics who die, retire or shift to other work."[5]

However, it is estimated, only 10 percent of these skilled journeymen will be provided through apprenticeship, unless the present situation is drastically improved.[6] The rest of the workers will come in through the back door (see Chapter 4 for details on back door entry to trades). Many of them will be trained haphazardly, if at all. The odds are that they will lower rather than raise productivity.

There are twelve major apprenticeable occupations in the building trades.[7] From the beginning of Wisconsin's apprenticeship program in 1911 until 1963, a total of 19,569 individuals joined it in various building trades occupations, of whom 10,268, or 52 percent, completed training. The building trades have accounted for 29 percent of all apprentices from 1911 to 1963, and its completions are 32 percent of those for all apprentices in the building trades for the same period. (Detailed statistical information on apprenticeship in the building trades is given in Appendix Tables B-1 through B-5.) According to the reports of the Apprenticeship Division of the Industrial Commission, the first indenture in building trades was approved in 1912; new registrations increased steadily through 1925 and then began to decline, reaching a low in 1933, the middle of the Depression. Indentures rose through the late 'thirties and again declined during World War II. With the influx of World War II veterans, new registrations reached an all-time high in 1946 and then dropped once more. In 1962, there were 503 new registrations in the building trades. Completions and cancellations followed essentially the same pattern, with completions reaching their all-time peak in 1950. The 52 percent completion rate for indentured apprentices between 1911 and 1962 was slightly better than the national average.[8] The peak year for cancellations was 1948.

Among the various occupations listed by the Apprenticeship Division under the category of building trades, carpenters had the greatest number of new registrations over the 1911-62 period. Plumbers and pipefitters ran a close second, and painters and decorators were third. Somewhat further down were electricians (construction), bricklayers and masons, and sheet metal workers; the next group in rank included cabinet makers, electricians (miscellaneous), and steam fitters. Plasterers ranked tenth; and grouped at the bottom were ironworkes, tile setters, stone cutters, marble masons, and ornamental ironworkers.

Plumbers have the largest number of completions, for perhaps several reasons. First, the State requires that all plumbers take an examination and obtain a license to become journeymen. Also, there is considerable joint effort on the part of management and labor in this trade and careful selection and emphasis upon quality by joint apprenticeship committees[9] (it should be noted that there is a national shortage of plumbers[10]).

The second largest number of completions is in carpentry, although it is eighth in percentage rank. Nonetheless, itsrate of completions, 53 percent, is better than the national average, 35 percent.[11]

Bricklayers and masons have the third largest number of completions and a completion rate of 63 percent. This fairly high percentage is in conformity with findings at the national level.[12] During the twelve-month period ending March 31, 1961, the completion rate in bricklaying and masonry was reported to be 74 percent, well above the approximately 50 percent experienced by all building trade occupations during the same period.[13] Other occupations in the building trades with a more than 50 percent rate of completions are electricians, with 54 percent; sheet metal workers, 56 percent; cabinet makers, 50 percent; steamfitters, 55 percent; and plasterers, 58 percent (see Appendix Table B-5).

Painters and decorators and stone cutters had very low rates of completion--33 percent and 25 percent, respectively. The low percentage for painters and decorators was reported to be the result of fears on the part of apprentices that the adoption of prepainted structures and types of construction that do not require extensive painting may create job shortages.[14]

During the first decade of the Wisconsin Apprenticeship program, 1911-20, only seven major occupations were listed as apprenticeable in the building trades.[15] There were, on the average, eleven new indentures and six completions each year in this ten-year period. Over half of total indentures were in bricklaying and masonry, while plumbing accounted for one-third. The second decade, 1921-30, saw apprenticeable occupations rise from seven to twelve. Total new registrations increased ten times over the previous decade, and plumbers took over first place by a good margin, with bricklayers and mason slipping into second. Completions also rose, with plumbers and bricklayers and masons in the same leading positions. On the average, there were 136 new indentures and 45 completions each year.

New indentures again rose in 1931-40, although not so spectacularly, but there were shifts in the relative positions of the various occupations. Painters and decorators led in new registrations, with plumbers dropping to second, carpenters taking over third, and bricklayers and masons dropping to sixth. A decrease in the number of new indentures in plumbing is a major feature of this decade. Nonetheless, it still held first place in the number of completions, with painters and decorators second and bricklayers and masons third. Indentures averaged 180 each year and completions 62, during this period.

Under the influence of the influx of World War II veterans, new registrations rose some four-and-a-half times from 1931-40 to 1941-50. Indentures in carpentry led the field, increasing to almost ten times the previous decade's figure, with plumbers maintaining a second place, and electricians rising to third. A significant feature of this period is the decrease of new registrations in painting and decorating, since all other occupations registered gains. Completions also saw changes in relative position: plumbing dropped to second, in favor of carpentry, while painters and decorators fell to third, and electricians (construction) rose to fourth. There were 789 new indentures and 249 completions each year, on the average.

The decade 1951-60 saw a slight drop in total new registrations; about half the building trades occupations registered an increase in the number of new registrations and the other half a decrease. Carpentry and plumbing remained in first and second place, with painters and decorators rising to third and electricians (construction) dropping to fourth.[16] The dominant feature of this decade, of course, was the over-all decrease in the number of new registrations.[17] Nevertheless, completions increased, with carpentry maintaining first position and plumbing second, as a result of the increase in the number of new registrations during the second half of the 1941-50 decade. On the average, indentures numbered 710 and completions 563 annually.

During 1961-62, there were 1,012 new registrations and 777 completions. If the indicated trend holds up, total new registrations and completions will drop between 1951-60 and 1961-70.

Footnotes to Chapter 9

1. Edward E. Goshen, "The Coming Crisis in Apprenticeshp Training," Mechanical Contractor (March 1963), pp. 27-30.

2. Bureau of Apprenticeship and Training, Apprenticeship and Training in Carpentry Construction, Bulletin T-153 (Washington, 1962), pp. 37-42.

3. Ibid.

4. Ibid.

5. Charles J. Harding, "Construction Drifts toward a Labor...," Engineering News Record (April 20, 1961).

6. Edward E. Goshen, "The Coming Crisis in Apprenticeship Training," op. cit., pp. 27-30.

7. Bricklayer and mason, cabinet maker, carpenter, electrician (construction), iron worker, painter and decorator, plasterer, plumber, sheet metal worker, steamfitter, stonecutter, tile setter, and miscellaneous.

8. Bureau of Apprenticeship and Training, Bulletin T-153, op. cit., p. 11.

9. Speech by Robert Hammersmith, Executive Secretary, Wisconsin Association of Plumbing Contractors, Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO, Madison, January 26-27, 1960, p. 2.

10. Martin P. Durkin, National Assignment Memo No. 39, op. cit., p. 3.

11. Bureau of Apprenticeship and Training, Bulletin T-153, op. cit., p. 11.

12. Bureau of Apprenticeship and Training, Apprenticeship Training in Masonry Construction, Bulletin T-151 (Washington, 1961), p. 15. This study was limited to the period ending March 31, 1960.

13. Ibid., p. 17.

14. Information obtained from Mr. Harold M. Rohr, President of the Painters and Decorators Local 802, Madison.

15. Bricklayer and mason, cabinet maker, carpenter, electrician, painter, plasterer, and plumber.

16. If electricians (miscellaneous) were included with electricians (construction), then the relative position would change. How-

ever, they are classified as two different groups by the Apprenticeship Division in its files.

17. This decrease occurred despite the fact that many Korean War veterans became apprentices as the result of the financial subsidy they were given under P. L. 550. The Apprenticeship Division records are maintained in such a way that it would be necessary to go through each of the approximately 60,000 files to find out how many of Wisconsin's apprentices were veterans. Attempts to obtain this information from agencies related to veterans' affairs proved futile, for they do not have such data.

CHAPTER 10

THE METAL TRADES

Although the Apprenticeship Division lists many metal trades' occupations as apprenticeable, they are not crafts, in the same sense as are those of the building trades. Nonetheless, changes in technology, materials, and production processes have increased the skill requirements for many of them. Modern industry does not need "model makers in the classical sense, but a new skill that combines the talents of a designer, set-up man, tool maker, die maker and model maker."[1]

The labor market in metal trades is not seasonal, as it is in the building trades. In addition, working conditions are better, since little of the work is done outdoors. These relative advantages help attract relatively larger numbers of youths to apprenticeship in the metal trades, but in Wisconsin, as well as at the national level, there are still not enough apprentices. A nation-wide survey conducted by the Bureau of Apprenticeship and Training indicated that, on an industry-wide basis, 43 percent of shops were unable to hire sufficient qualified craftsmen in tool and die occupations. There were only 3,000 apprentices in 2,434 shops employing 3,400 journeymen; the tool and die industry as a whole trained only 60 percent as many apprentices as would be needed to replace journeymen who would die or retire in the subsequent five-year period.[2]

Metal trades fail to attract qualified young men because more and more young people with a high craft potential want to go to college.

For the most part, they are then lost to the crafts, even though they may one day become engineers and scientists who originate projects that require craftsmen. Peter Drucker, at the 1959 convention of the Manufacturers' Association of Connecticut, stated: "Last year, a well-known national company made a survey in one of its plant cities and discovered that three out of four local high school graduates in the last five years--those who matched up scholastically with the company's skilled men who are today in the 40 to 50-year age bracket--were going to college instead of taking apprentice training, as would have been the case 25-30 years ago."[3]

Another recruiting deterrent is the narrowing wage differential between craftsmen and specialists. In addition, there is "the problem of social status, the hourly rated blue collar metal working craftsman has not the same social prestige as the white collar technician or engineer." Finally, many young men are lost to the crafts because of the "misguidance of guidance counsellors."[4]

Management has also been held responsible. It has failed to develop a new generation of craftsmen, concentrating its efforts recently on research and development, engineering, sales, and finance. It has failed to realize that skill is a consumable item, that unless it is replenished and provision is made for growth, the resulting shortage becomes more and more difficult to offset. It assumes that the increasing number of technical high schools and vocational schools automatically takes care of industry's need for craftsmen, so that industry need make no effort of its own in this direction. It failed to find out what kind of people, what education, and what training are needed to produce highly skilled workers.[5]

At present, there are 19 major apprenticeable occupations in Wisconsin in metal trades, compared to twelve for the building trades. Between 1911 and 1962, there were 19,598 new registrations of indentured apprentices in the metal trades, of which 10,806, or 55 percent, graduated. (Detailed statistical information on apprenticeship in the metal trades is given in Appendix Tables M-1 through M-3.) In general, new registrations rose until the late 1920's, dropped off during the Depression, rose again to an all-time high in 1946, and in recent years have dropped off. Completions and cancellations have followed a similar pattern, with completions reaching their all-time high in 1949.

Over the 1911-62 period, machinists (regular) had the largest number of new registrations and completions. Tool and die makers were second in new registrations, with draftsmen third, molders fourth, and toolmakers fifth. For completions, draftsmen ranked second, tool and die makers third, toolmakers fourth, and molders fifth.

The first apprentice in metal trades under the Apprenticeship Law was registered in 1912, but new registrations picked up fairly quickly, as World War I approached, then dropped back somewhat. The largest number of registrations during the 1911-20 period were for machinists, toolmakers, electricians (industrial), draftsmen, and molders, in that order. Completions followed the same pattern as registrations, and the leaders are the same as for registrations in the first four places, with patternmakers (metal) fifth. The most noticeable feature of this decade is the extent to which machinists dominated the metal trades: they accounted for approximately three-fourths of all registrations and completions in this industry.

The period 1921-30 saw a rise in both new registrations and completions, although the ratio of completions to registrations fell. As before, machinists led in number of registrations, followed by molders and toolmakers, and in number of completions, with draftsmen second, molders third, and toolmakers fourth. Although machinists still accounted for a good deal of the transactions in the trade, there was rapidly increasing activity among draftsmen, molders, and sheet metal workers.

Transactions during 1931-40 declined, as the effects of the Depression were felt. In 1932, new registrations hit a figure lower than that for 1913, but had recovered by the end of the decade. Rankings for new registrations were the same as the previous period among the leaders, but for completions, after machinists, there were some shifts in position: toolmakers were second, draftsmen third, and molders fourth. While toolmakers were showing better than average gains in completions, electricians (industrial) suffered a setback, dropping from fifth to tenth place. But the most important features are the effects of the Depression: the decrease in new registrations, as noted, and the very small number of cancellations (see Appendix Table M-1).

The next decade, 1941-50, saw a large increase in the number of new registrations, particularly in 1946, the peak year, because of the influx of Worl War II veterans. Machinists led new registrations, with a newly declared apprenticeable trade, tool and die makers, taking second. Draftsmen were third, molders fourth, patternmakers (wood) fifth, and electricians (industrial) sixth. In completions, machinists were first, the new category tool and die makers second, draftsmen third, and toolmakers fourth. This period saw the largest increase in total numbers of new registrations, completions, and cancellations (which hit their peak in 1948); another important feature was the inclusion of a number of trades not previously on the apprenticeable list.

New registrations declined from 1941-50 to 1951-60, as did completions. The largest number of registrations was for machinists, with tool and die makers again second, draftsmen third, and electricians (industrial) fourth. The same four trades led completions, as well. The most noticeable feature is, perhaps, the continued growth of the importance of electricians (industrial).

As was the case with building trades, the 1961-62 figures indicate a continuing decline in apprenticeship transactions in the metal trades.

Footnotes to Chapter 10

1. I. Harry Hyman, "The Craftsman: Today's Vanishing American," *American Machinist and Metalworking Manufacturing* (April 4, 1960), pp. 2-3.

2. "Our Apprentice Set Up Is a Scandal," *American Machinist* (September 21, 1959).

3. Quoted by I. Harry Hyman, *op. cit.*

4. *Ibid.*

5. *Ibid.*

CHAPTER 11

THE MISCELLANEOUS TRADES

Apprenticeable occupations in trades other than the building or metal trades are included by the Apprenticeship Division under the category of "miscellaneous trades." They include the following: automotive trades, food industry, graphic arts, metal working trades (e.g., jewelry-making), municipal utilities, printing trades, sales, clerical, and kindred occupations, service trades, leather goods industry, and lumber industry. In the 'twenties and 'thirties, the garment industry and railroad industry were also included. As of 1963, there were 116 apprenticeable occupations in this category, but they are listed under 15 major occupational classifications by the Apprenticeship Division.[1]

Since the elimination of the garment industry and railroad industry, each of which had ten apprenticeable occupations, in 1940, the leading industry is now printing, with six major apprenticeable occupations. The number of apprenticeable occupations in each of the other trades or industries is given in Appendix Table O-1.

Between 1911 and 1963, there were 27,574 new registrations in the miscellaneous trades, or 42 percent of all registrations in all trades. Completions numbered 10,249, and cancellations 15,137 (see Appendix Table O-2). As in the other two trade categories, transactions experienced a decline during the Depression, a large increase during 1941-50, and a dropping off in 1951-60. These last two decades saw 87 percent of all new registrations, 86 percent of all completions, and 85 percent of all cancellations. However, the over-all performance of the apprenticeship program in the miscellaneous trades is poor: only 37 percent of all indentured apprentices completed training from 1911 to 1963 (Appendix Tables O-3 and O-4).

Automotive Trades

As can be seen from Appendix Table O-5, of the eight apprenticeable occupations which have at some time been listed under automotive trades, auto mechanics are by far the most active group, and their completion rate is 56 percent. The change in the number of transactions from decade to decade has been like that of the other trades, with one notable exception: the automotive trades have registered an increase in the number of new registrations during 1951-60, although completions have fallen (see Appendix Table O-6).

Printing Trades

As with the automotive trades, the list of occupations in the printing trades has changed over time. The most active have been graphic arts-miscellaneous, with a completion rate of 54 percent, and printer-compositors, with a completion rate of 48 percent (see Appendix Table O-7). The apprenticeship program in the printing trades has experienced an over-all growth, despite decreases during 1931-40 and 1951-60 (Appendix Table O-8).

Service Occupations

This is the largest occupational group, as far as number of transactions is concerned, but cancellations are high, as completions run only 30 percent. Cosmetology attracts the largest number of apprentices, but has a completion rate of 22 percent. The next largest number of new registrations is barbering, with 34 percent graduating (see Appendix Table O-9).

Food Industry

The completion rate in this group is 39 percent. Bakers had the largest number of new registrations, but only 30 percent graduated. It should be noted that at present apprenticeship transactions are not reported separately, but are grouped under "general miscellaneous." This may be due to the very small number of annual registrations (see Appendix Table O-10).

Metal Working Occupations

Watchmaking is the principal occupation here, with a completion rate of 50 percent (the same as that for the whole group). Its dominating position is probably due, at least in part, to the State licensing law, which requires all would-be watchmakers to pass an examination (Appendix Table O-11).

Clerical and Sales Occupations

This group is dominated by business (miscellaneous), a fairly recent addition to the list, with a completion rate of 16 percent, and dental techicians, of whom 36 percent have graduated. The group completion rate is 23 percent. The leading position of business (miscellaneous) probably reflects the growth of white collar occupations, although it is difficult to think of them as being apprenticeable (Appendix Table O-12).

Garment Industry

At present there are no apprenticeable occupations in this trade category; it is included only for historical interest. The reports of the Apprenticeship Division ceased to contain data on transactions after 1931. Up to that time, the most active occupation was knitting and looping machine adjuster, with a completion rate of 52 percent. The glove industry followed, with 69 percent graduating. Lining makers and milliners had a relatively large registration, but low completion rates. The completion rate for the whole group was 48 percent (see Appendix Table O-13).

Railroad Industry

Again, the Apprenticeship Division reports no data on this group, and for only one occupation from 1931 to 1962--machinist-railroad. This occupation dominated the group, with 54 percent of all registrations and 72 percent of all completions, its own completion rate, 68 percent, being the highest in the group (Appendix Table O-14). Machinists-railroad has shown a declining number of new registrations over the entire

1911-62 period (except for its 1941-50 recovery from the effects of the Depression); but a noticeable feature is its completion rate of 96 percent for 1951-60 (see Appendix Table 0-15).

Minor Trade Categories

Apprenticeable occupations not included above fall into the following industry groups: professional occupations, semi-professional occupations, lumber industry, leather goods industry, utilities, and others. Appendix Tables 0-16 and 0-17 give the number of new registrations and completions in these various groups. The group with the most new registrations is the utilities, although the occupations included there have been apprenticeable only since 1949. Its completion rate has also been quite high. The second ranking group in terms of new registrations is the leather industry, but here the completion rate is low. At present there are only four major occupations attracting apprentices--shoemaker, lineman, shipbuilder, and woodworker--and the number of registrations is very small.

Note to Chapter 11

1. Auto body repairman, auto mechanic, barber, cosmetologist, lineman, meat cutter, pressman, compositor, watchmaker, service trades, business (miscellaneous), graphic arts (miscellaneous), general (miscellaneous), lithographers, and municipal utilities.

CHAPTER 12

THE CURRENT POSITION OF THE APPRENTICESHIP PROGRAM

Apprentice training is 54 years old in Wisconsin, the first State in the nation to inaugurate a government-regulated apprenticeship program. However, since 1946, the total number of apprentices indentured has been declining, and there has been a similar drop in total completions. Given these trends, it is increasingly difficult for the apprenticeship program to fulfill its basic objective: to supply an adequate number of skilled craftsmen for the needs of the State's industries. The decline has been so serious that it has drawn the attention of those interested in the program's success. The president of the Wisconsin State AFL-CIO stated: "...we are rapidly losing our status as being one of the finest skilled labor markets in the United States...At the present time (1961) we are down to about 4,325 apprentices that are now in training as of today and this is an alarming stuation. There should be no less than 4,000 new indentures each year coming into the services of apprenticeable trades, and we should have in the neighborhood, under our existing program which ranges from 3 to 5 years, somewhere between 15,000 to 20,000 apprentices in training at all times."[1]

And in 1960, the chairman of the Industrial Commission said: "The state now has approximately 250,000 skilled craftsmen--mechanics, tool and die workers, etc. But currently there are fewer than 5,000 in training, or only one replacement for every 50 craftsmen."[2] The loss in the supply of skilled labor may affect industrial growth rates in Wisconsin. "Unless the number of apprentices entering into the skilled trades are stepped up sharply, new industry will be in serious trouble in a very few years."[3]

Total new registrations for the 1911-63 period were 67,670, of which 32,040, or 47 percent, graduated. New registrations rose from 1911-20 to 1921-30, then declined in 1931-40. The next decade witnessed a phenomenal growth, but new registrations declined in 1951-60. Completion rates followed much the same pattern, except that they increased in 1951-60 over 1941-50, because most of those indentured during the latter half of 1941-50 did not graduate until the 1951-60 period. Cancellation rates paralleled those of new registrations.[4]

For the whole period, 29 percent of new registrations were in the building trades; 28.9 percent in the metal trades, and 42 percent in miscellaneous trades. Each of the trade categories, however, accounted for about one-third of total completions.

From the inception of the apprenticeship program in Wisconsin, new registrations rose steadily up to 1925 and thereafter declined. During 1930-33, the dropping off was severe, because of the Depression. From 1934 to 1946, the over-all trend was one of growth, with the year 1946 seeing tremendous increases as the result of returning World War II veterans entering the program under P.L. 346. Since then, new registrations have shown an over-all decline, despite the entry into the program of Korean War veterans subsidized under P.L. 550.

The number of completions is an indicator of the performance of an apprentice training program. Under given economic conditions, other factors being equal, a high completion rate indicates that the various elements involved in training and the various institutions participating in the program function harmoniously and effectively. But a large number of new registrations in a particular year will have its impact upon completions only after at least two years (cosmetology has the shortest training period, two years, and printing the longest, five years). For example, the largest number of new registrations in the period before World War II occurred in 1937, and its influence on completions was spread out over 1939, 1940, 1941, and 1942 (see Appendix Table A-1).

Nonetheless, a number of tables presented here include completion rates, i.e., completions in that year as a percentage of new registrations for that year. In other words, they do not indicate that of 5,000 new registrations for such-and-such a year, 2,000 or 40 percent graduated; but rather that in such-and-such a year, there were 5,000 new registrations and 2,000 (which is 40 percent of 5,000) completions. This is not a reliable method of calculating the true rate of completion, i.e., the percentage of newly indentured apprentices who actually completed the program and graduated, but there seems to be no other way of approaching it. The number of completions is perhaps more meaningful, since it tells us exactly how many apprentices graduated each year. The trend in apprenticeship completions in Wisconsin since 1911 is shown in Table 12-1.

Cancellations denote those apprentices who are lost to the pro-

TABLE 12-1.

Apprenticeship Completions in Selected Years, 1912-62

Year	Total number of completions	Year	Total number of completions
1912	2	1940	444
1920	265	1945	174
1926	384	1950	2,909
1930	4	1955	1,215
1931	356	1960	1,399
1935	232	1962	882

Source: Appendix Table A-1.

gram during the accounting period, but do not include suspended apprentices, who are usually reinstated into the program. The smaller the number of cancellations, the better; they are costly both to the individual apprentice, the employer, the government, and, finally, the larger community. Table 12-2 shows the trend in cancellations.

TABLE 12-2.

Apprenticeship Cancellations in Selected Years, 1912-62

Year	Total number of cancellations	Year	Total number of cancellations
1912	2	1940	369
1920	259	1945	616
1925	372	1948	3,958
1930	18	1950	1,970
1931	13	1955	856
1935	54	1962	385

Source: Appendix Table A-1.

The decline in cancellations is a hopeful sign, but the crux of the problem is the decrease in the number of new registrations. Perhaps something can be learned from an analysis of transactions in the three major trade categories since 1940,[5] to determine which suffer from low registration and completion rates and from high cancellation rates.

The metal trades had the largest share of total new registrations from 1940 to 1943, 63 percent, while miscellaneous trades accounted for 33 percent and building trades for only 4 percent. After 1943, the share of metal trades declined, while that of building trades rose and that of miscellaneous trades fluctuated. Since 1949, the metal trades have shown signs of recovery, though they have been subject to much variation. The share of the building trades rose steadily to 1958 and then leveled off, while miscellaneous trades declined fairly steadily. All three trade categories have suffered a decline in new registrations since 1946. Of the three, building trades have suffered the least and miscellaneous trades the most. Despite improvements, metal trades have not recovered the position they held before World War II.

Similarly, the metal trades accounted for the largest share of completions in the early part of the 1940-63 period and then experienced a decline. The completion shares of the other two categories also roughly paralleled their shares of new registrations. After World War II, the share of metal trades dropped off, while those of building trades rose. In 1950, metal trades began to show improvements, as did building trades, while miscellaneous trades fell steadily. In the last part of the period, the share of metal trades dropped somewhat, while building trades continued to improve, and miscellaneous trades held more or less steady.

With regard to cancellations, the share of metal trades increased at the beginning of the 1940-63 period, while that of building trades dropped; the share of miscellaneous trades also rose. The period after World War II was dominated by a very large number of cancellations in miscellaneous trades, with building trades taking the second largest share and metal trades the smallest. The relative position of these three trades with regard to cancellations has been unchanged since.

Footnotes to Chapter 12

1. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO (1961), op. cit., p. 1.

2. Speech by Mr. Schimenz, reported in The Milwaukee Journal, November 22, 1960.

3. Speech by Mr. C. T. Nye, director of the Apprenticeship Division, reported in The Milwaukee Journal, June 17, 1961.

4. Figures on completions indicate only the number of individuals who completed training by 1963; apprentices indentured in 1961 or even before may still be in the program. The same is true of cancellations. Thus, new registration, completion, and cancellation figures do not tally.

5. For an analysis of apprenticeship statistics up to 1931, see Industrial Commission, First Report, op. cit.; for the period 1932-40, see Oswald L. Harvey, op. cit.

CHAPTER 13

APPRENTICESHIP AS A LABOR MARKET DEVICE

In 1940, there were 121,521 skilled male workers employed in Wisconsin; there were 180,530 in 1950 and 194,798 in 1960. Hence, the total number of skilled male workers employed in the State increased more than 50 percent between 1940 and 1960.[1] There is no data indicating the demand for various skilled occupations. Therefore, employment data from the census reports for skilled male workers in occupations that are comparable to those listed as apprenticeable by the Apprenticeship Division have been used to compute the growth of employment. An increase in the number of employed workers is taken as an indicator of the net increase in demand. To this is added the total number of workers needed to replace those who might have died or retired or left the work force, to arrive at an estimate. Thus, demand is assumed to be the growth in the number of workers employed between two periods, plus the number of workers required to replace those who for some reason would have left the work force.

The number of workers required for replacement is based upon the replacement rate calculated by the Wisconsin State Employment Service.[2] This, in turn, is taken from the labor force retention rate and the age distribution of skilled workers by occupation, as reported by the Bureau of Labor Statistics. The assumption is that there has been no radical change in the age distribution of skilled workers between 1940 and 1962. Wherever skilled occupations show a decline in employment (see Appendix Table A-7), only the total number of workers required for replacement is used to figure the demand for workers. The supply of skilled workers in each occupation in any given year is considered to be the total number of apprentices who complete their training and attain the status of journeymen each year.[3]

Table 13-1 shows the employment and supply of workers in selected occupations in the building trades during 1941-60. Apprenticeship's low contribution may be due to increased demand for skilled workers to meet war production needs plus fewer new registrations as a result of the draft. Moreover, completion rates were quite low and cancellations high. During 1951-60, however, the supply of workers increased, primarily because completions increased in this period. In addition, most of those apprentices indentured in the latter half of the 1940's began to complete their training in the early 1950's. Also, there was a decrease in employment.

TABLE 13-1

Employment and Supply of Skilled Workers through Apprenticeship Training in Selected Occupations in the Building Trades, 1941-60

Occupation	1941-1950			1951-1960		
	Employment	Supply	Percent	Employment	Supply	Percent
Bricklayers and kindred workers	2,310	232	10	805	673	83
Cabinet makers	923	132	14	410	247	60
Carpenters	9,818	717	7	3,730	1,215	33
Electricians	3,073	368a	12	1,603	710	44
Painters	2,609	319	12	1,590	349	22
Plumbers and pipe fitters	2,893	360	12	1,642	1,156	70

a. Includes both "industrial" and "construction," for the census classification does not list them separately.

Source: Appendix Table A-5, for this and following tables.

TABLE 13-2

Employment and Supply of Skilled Workers through Apprenticeship Training in Selected Occupations in the Metal Trades, 1941-60

Occupation	1941-1950			1951-1960		
	Employment	Supply	Percent	Employment	Supply	Percent
Electricians(a)	3,073	368	12	1,603	710	44
Machinists	4,163	1,666	40	3,880	1,041	27
Molders	750	194	26	600	134	22
Sheet metal workers(b)	1,597	233	15	690	516	75
Steel and ornamental metal workers(c)	547			438		
Tool and die makers	2,874	469	16	1,786	651	36
Welders(d)	6,490	153	2		45	

a. Also included under building trades.

b. Includes both building and metal trades.

c. No such classification in the Apprenticeship Division

d. Reported in the census index operatives.

Table 13-2 gives the employment and supply of skilled workers in selected metal trades occupations. Again, the demand was much larger in 1941-50 than in 1951-60, and apprenticeship training more successfully fulfilled demand in the latter period, with the exception of machinists and molders.

In selected occupations in the miscellaneous trades, demand decreased during 1951-60, except for compositors and linotype operators, and the ability of apprenticeship training to fulfill demand in these occupations increased between 1941-50 and 1951-60 (see Table 13-3). The number of apprentice compositors and linotype operators doubled

TABLE 13-3

Employment and Supply of Skilled Workers through Apprenticeship Training in Selected Occupations in the Miscellaneous Trades, 1941-60

Occupation	1941-1950			1951-1960		
	Employment	Supply	Percent	Employment	Supply	Percent
Bakers	600	68	11	550	76	14
Compositors and linotype operators	1,023	116	11	1,126	260	23
Linemen and servicemen(a)	2,734	35	1	1,571	131	8
Lithographers and photoengravers	404			214		
Meat cutters	1,005	194	19		229	
Printing Pressmen(b)	419	101	24	904	159	18

a. Apprentice training reported by the Apprenticeship Division only from 1948.

b. Pressmen only.

between the two periods, perhaps because, among other things, the compositors' union practices a scientific method in maintaining its journeyman-apprentice ratio. Other increases in the number of apprentices becoming journeymen may be due to the fact that those who were indentured during the late 1940's completed training in the early 1950's, for the most part.

Ideally, if apprenticeship is supposed to be the best method for developing skills, then all of the needed skilled workers should come from apprentice training. The fact that only a part of them does indicates that apprenticeship as a labor marker device has only limited[4] usefulness in Wisconsin, as it does in the United States as a whole.

Actually, the performance of Wisconsin's apprenticeship program is better than the national average. Thus, while apprenticeship in Wisconsin is not a spectacular success, neither is it completely moribund. Nonetheless, it is clearly shown that Wisconsin's apprenticeship program is not as popular with employers, apprentices, and would-be apprentices as it should be. The findings of the surveys conducted among current apprentices, apprentice drop-outs, and employers participating in the program indicate that certain changes might be made to revitalize it.

Footnotes to Chapter 13

1. 1950 Population Census, Vol. II, Characteristics of Population, Part 49, Wisconsin, Table 29; and 1960 Population Census, Wisconsin, Table 120.
   For purposes of comparison, only those skilled occupations that are equivalent with an apprenticeable occupation were selected; meat cutters and welders are not skilled occupations.

2. Wisconsin State Employment Service, Wisconsin Manpower Outlook, Individual Occupation Reports (WSES 3051) (Madison, 1962).

3. Apprenticeship is not the only means of skill development; many workers attain journeyman status without ever undergoing apprentice training. For details, see Chapter 4, and George B. Strauss, *op. cit.*

4. *Ibid.*, p. 301.

PART III. A SURVEY OF PARTICIPANTS IN WISCONSIN'S APPRENTICESHIP PROGRAM

CHAPTER 14

THE SURVEY AND ITS LIMITATIONS

As Part II has shown, there have been declines in the total number of new registrations and completions in Wisconsin's apprenticeship program for the past two decades, as well as a large number of cancellations. This has caused concern among those interested in the program (see Chapter 12). Union spokesmen and management representatives have suggested different reasons for these figures, but no one was certain if either view was correct or even partially correct. Further, no one had tried to ascertain the attitudes toward the program of either the participating apprentices or those who dropped out. Thus, the problem was to develop information on the opinions of various participants with regard to the program in general and its recent decline in particular.

Data on the views of current apprentices were collected by the administration of questionnaires in selected State cities through the vocational schools they were attending for related instruction. The opinions of participating employers were gathered by mail questionnaires sent to a sample population, as were the opinions of drop-outs.[1] In all three cases, the questionnaires were very short and simple; the main questions were open-ended, to achieve a maximum possible response. This survey was primarily designed as a general pilot study, and as a result, there were few questions, mainly dealing with the views of the group questioned.

In each case, the survey includes participants from all three trades categories--building, metal, and miscellaneous.[2] Thus, the findings are only indicative and suggestive. Nonetheless, they may help to formulate further questions and research with specific objectives.

Footnotes to Chapter 14

1. A detailed account of the method of data collection is given for each survey in Chapters 15, 16 and 17, respectively. The questionnaires appear in the Appendix.

2. Among the list of current apprentices and drop-outs, there were a great many barbers and cosmetologists. In order to avoid a bias, and for reasons of economy, they were excluded from this survey.

CHAPTER 15

THE VIEWS OF CURRENT APPRENTICES

The Industrial Commission of Wisconsin at one time published a monthly magazine, The Wisconsin Apprentice, that among other things served as a forum for apprentices who wished to comment on their training programs. Since this magazine ceased to exist, some thirty years ago, apprentices have had no chance to express their viewpoints; no one has asked their opinions.

It may be argued that the apprentice has an opportunity to voice his opinions to the officials of the Apprenticeship Division at inspection time. However, because of the shortage of personnel, the average apprentice is visited between once and twice a year and thus has few occasions to meet the field official. And even then, apprentices may be reluctant to speak freely, because inspections are carried out in the presence of the employer.

Yet union officials are given an opportunity to express their opinions on apprenticeship through their annual apprenticeship conferences, and to some extent, management airs its views at these or other conferences on apprentice training. It was to fill the gap created by lack of opportunity for apprentices' opinions to be voiced that they were included in this study.

The survey included apprentices attending schools for vocational and adult education during 1963-64 in Appleton, Green Bay, Madison, Milwaukee, Oshkosh, and Racine. These six Wisconsin cities were selected for two reasons: 44 percent of all State apprentices were concentrated in these schools, and each of these schools had apprentices in all apprenticeable trades. Milwaukee has the largest number of apprentices and is the leading industrial center; Madison holds second position. Appleton, Green Bay, Racine, and Oshkosh represent the highly industrialized Lake Winnebago-Fox River Valley area.

During 1963-64, a total of 2,707 apprentices (excluding barbers and cosmetologists) attended the State's vocational schools. Of these, 1,200 were enrolled in the selected six cities (see Table 15-1), of whom 720, or 60 percent, responded to the questionnaires. The largest number of respondents is from Milwaukee, with Madison second. But in percentage responding, Racine is first, Appleton second, Milwaukee third, and Madison last.

The questionnaires were distributed to the apprentices when they came to school, and the director of the school collected the answered questionnaires and returned them by mail. Limited funds prevented the questionnaires being mailed directly to the apprentices, and besides, response was expected to be higher when questionnaires were handed out in the classroom. (Apprentices returned their answers in a plain sealed envelope to their school director.) But the method used created certain problems, as well: there was no way to reach apprentices who were absent from their class on the day the questionnaire was administered, and in addition, an inevitable delay resulted, because apprentices be-

TABLE 15-1.

Distribution of Respondent Current Apprentices by Cities Where They Attended School

City	Total enrollment(a)	Number of respondents	Percent in total
All	1,200	720	60
Appleton	80	56	70
Green Bay	79	41	52
Madison	312	136	44
Milwaukee	591	382	65
Oshkosh	48	29	60
Racine	90	76	84

a. Information furnished by the directors of the various vocational and adult education schools; figures refer to enrollment at the time of the survey (1963-64), excluding barbers and cosmetologists.

longing to different trades attended school on different days and in different weeks of the month. Also, the fact that apprentices were supervised by their teachers while they answered the questionnaires might have influenced their answers.

Of the 720 respondents, 399, or 55 percent, belong to the building trades; 281 respondents, or 39 percent, belong to the metal trades; 34, or 5 percent, to the miscellaneous trades; and 5 respondents (1 percent) failed to mention their occupations. This distribution is the result of the fact that in 1963-64 there were more apprentices in the building trades than in the other two. A breakdown of the respondents according to their occupations is given in Table 15-2. Under the building trades, steamfitters, plumbers, and carpenters comprise the three largest groups of respondents, while in metal trades, machinists, electricians, and tool and die makers hold these positions. The reason for

TABLE 15-2.

Occupational Distribution of Respondent Current Apprentices

Occupation	Number	Percent(a)
All building trades	399	100
Bricklayer, mason and tile setter	21	5
Cabinet makers	7	2
Carpenter	61	15
Electrician	34	9
Ironworker	3	1
Painter and decorator	23	6
Plumber	85	21
Plasterer	3	1
Sheet metal worker	66	17
Steamfitter	89	22
Others	7	2
All metal trades	281	100
Blacksmith	3	1
Draftsman	9	3
Electrician	69	24
Maintenance mechanic	17	6
Machinist	89	32
Molder	5	1
Patternmaker	7	3
Sheet metal worker	24	9
Tool and die maker	50	18
Tool designer	2	1
Welder	2	1
Others	4	1
All miscellaneous trades	40	100
Meat cutter	5	13
Pressman	1	3
Watchmaker	1	3
Service trade	8	20
Lithographer	19	48
Others, not ascertained	6	15

a. Figures are rounded in this and following tables.

Source: Question 5 of the questionnaire.

the low number of respondents in the miscellaneous trades is the exclusion of barbers and cosmetologists; these two groups constitute some 34 percent of all apprentices indentured in this trade category from 1911 to 1962. Of those who did respond, lithographers constitute almost half, with services trades and meat cutters taking second and third place.

TABLE 15-3.

Distribution of Respondents by Age and Education

	Number	Percent
All	720	100
18-19 years of age	72	10
20-24	403	56
25-34	216	30
Not ascertained(a)	29	4
Elementary schooling	6	1
One or more years of high school	602	83
High school graduate, but no college	13	2
One or more years of college	98	14
Not ascertained	1	-

a. Includes less than 1% in other age groups.

Source: Questions 2 and 3, respectively, of the questionnaire.

More than half the respondents are in the 20-24 age group (Table 15-3). And more than 80 percent have had some high school. Most respondents did not indicate the number of years of high school attendance, so it is not possible to break this group down any further. Sixteen percent were high school graduates, and most of these had taken some college training, although, again, they failed to indicate the number of years. Thus the trades have, to a large extent, succeeded in enforcing their demand that only those with at least some high school education be indentured as apprentices.

TABLE 15-4.

Occupational Distribution of the Respondents' Fathers or Guardians

Occupational Group	Number	Percent
All	720	100
Professional, technical, and kindred workers	33	3
Farmers and farm managers	60	8
Managers, officials, and proprietors, except farm	71	10
Clerical and kindred workers	20	3
Salesmen	12	2
Craftsmen, foremen, and kindred workers	286	39
Operatives and kindred workers(a)	134	18
Service workers	22	3
Others(b)	82	12

a. Includes non-farm laborers.

b. Includes deceased, not in labor force, not ascertained, etc.

Source: Question 4 in the questionnaire.

In order to keep the questionnaire as brief as possible, the only family background information requested was the occupation of the respondent's father or guardian. The results more or less confirm the frequently stated opinion that many apprentices come from families where the head is or has been a skilled craftsmen; 39 percent replied that their fathers or guardians were craftsmen or foremen (Table 15-4). However, the view that apprenticeship is open only to the sons and daughters of journeymen already in the occupation is not supported, even if we assume that the respondents who come from families headed by a craftsman have chosen the same trade as their fathers or guardians, and then add those apprentices whose fathers are either operatives or the like,

TABLE 15-5.

Reasons Given by Respondents for Becoming Apprentices

Reasons	First response	Second response	Third response
All	100	100	100
Nature of the occupation	30	26	15
Gives personal satisfaction	18	15	9
Like indoor/outdoor work (whichever applies)	9	10	5
Familiar with current occupation	2	1	1
Previous occupation uninteresting	1		
Financial aspects and job security	53	57	50
Job security	35	19	15
Better financial reward in apprenticeship	12	29	22
Good future in the occupation	5	4	6
Can earn while learning	1	1	1
Persuasion by others--relatives, unions, employers	4	3	3
Other reasons	13	14	7
Unable to go to college, hence apprenticeship	3	2	1
Previously unemployed	2	2	1
Previous training in occupation	2	1	1
Only way to get license in the trade	1	2	1
Apprenticeship gives inexpensive education	5	7	3

Source: Question 6 of the questionnaire.

under the same assumption. This still only accounts for 57 percent. After these two groups are considered, the remainder are scattered in various occupations. Thus, a majority of the respondents had fathers or guardians who were or had been blue collar workers, while only a small percentage came from families of white collar workers, professionals, or farmers.

Table 15-5 shows that apprentices cite two major reasons for their decisions to go into the apprenticeship program: the nature of the occupation itself, and the financial reward and job security that go with skilled occupations. A more detailed breakdown of responses indicates that the three major factors are the personal satisfaction derived from their chosen occupation, job security, and better financial reward in apprenticeship. Almost 20 percent of respondents cited their desire to learn a skilled trade, without specifying further what they meant, and these have been included under job security.

A belief in the importance of the fact that young men can earn while they learn is not supported. Very few respondents cited this aspect specifically or indirectly--that apprenticeship provides inexpensive education, or that they were financially unable to go to college. And less than 5 percent cited the influence of others, despite the large percentage of respondents from blue collar families. But the reasons most often cited must be remembered: job security, financial reward, liking the occupation, etc. The presence in the family of a skilled tradesman would surely result in the apprentices knowing the nature and value of these occupations.

The reasons respondents gave for becoming apprentices varied according to their age group (see Table 15-6). Financial rewards were the most important among all respondents. The importance of liking the occupation and the financial aspects increased with age, while the importance of the influence of others, as well as other non-economic and non-job-oriented reasons, decreased with age.

TABLE 15-6.

Reasons Cited by Age of Respondents, Education, and Trade

Age Group	Like occupation		Want to learn a skilled trade		Financial reasons		Influence of others		Other reasons		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
16-17			1	100							1
18-19	13	20	9	14	20	31	8	12	15	23	65
20-24	128	31	73	18	138	34	15	4	55	13	409
25-34	63	30	46	22	80	38	5	2	15	7	209
35-44	2	50	1	25					1	25	4
45-54	1	100									1
Education											
Elementary school	1	17	2	33	1	17			2	33	6
Some high school	182	30	107	18	203	34	24	4	81	14	602
High school graduate but no college	3	23	5	38	3	23			2	15	13
Some college	29	30	22	22	35	36	5	5	7	7	98
Trade											
Building trades	139	35	73	18	121	31	22	6	41	10	396
Metal trades	63	23	59	21	108	39	6	2	44	16	280
Miscellaneous trades	11	33	4	12	13	39	1	3	4	12	33

Source: Questions 2, 3, 5, and 6. Figures exclude those not ascertained.

Also, answers varied with different educational attainments. Again, the importance of liking the occupation and the financial rewards increased with the amount of education, while non-economic and non-job-oriented reasons were stated more often by those with only elementary school education.

Finally, differences showed up when respondents were separated as to the trade category they were in. Apprentices in the building trades and miscellaneous trades more often cited their liking for the occupation than those in the metal trades. In contrast to this, respondents in the metal trades and miscellaneous trades more often stated their concern with financial rewards than did those in the building trades. The fact that those in the miscellaneous trades cited their desire to learn a skilled trade less often than those in the other two may be because a large number of occupations in the miscellaneous trades are not as skilled as most occupations in the building trades and metal trades.

The respondents were asked to suggest improvements in the apprenticeship program. Their replies centered mainly around related instruction, shop training, and wages (Table 15-7). They were far less concerned with improvements in supervision by the Apprenticeship Division, greater participation in union affairs, a shorter period of apprenticeship, etc.

The improvements suggested by respondents showed relatively little variation with their age: for example, approximately 25 percent in each

TABLE 15-7.

Distribution of Respondents by Percent and Their Suggestions for Improvements

Suggested improvements	First response	Second response	Third response
Improvements in related instruction	39	23	9
Improvements in shop training	23	21	12
More wages to apprentices and lower union dues	12	6	4
Improvements related to participating agencies	5	5	2
Shorter period of apprenticeship(a)	3	2	1
Others(b)	0	1	0
No comment	5		
Don't know	1	1	1
No second or third response		31	59
Not ascertained	11	11	11

a. Higher entrance requirements.

b. Includes greater participation in union.

Source: Question 7 in the questionnaire.

age group suggested improvements in shop training. There were some differences, however. Concern with improving related instruction showed some decrease with age, while better supervision and general improvements were more often cited by older respondents. There was more concern with wages in the 20-24 age group than any other. And, in general, younger respondents seemed more critical of the program than older ones.

With regard to different suggestions for improvements according to education, there is little difference between those with some high school and those with some college, except that those with some college education tended to be a little more critical of the program. Respondents with only elementary school seem to show a greater concern with

TABLE 15-8.

Suggested Improvements by Age of Respondents, Education, and Trade(a)

	Improve shop training		Improve related instruction		Better supervision		More Wages		General improvement		None	
Age group	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
16-17	1	100										
18-19	14	24	31	53			6	10	1	2	7	12
20-24	95	26	160	44	14	4	57	16	14	4	18	5
25-34	49	26	81	43	17	9	23	12	7	4	11	6
35-44	1	25									2	50
45-54							1	100				
Education												
Elementary school			3	60	1	20					1	20
Some high school	136	26	238	45	25	5	77	15	20	4	29	5
High school graduate but no college	5	38	2	15	2	15			1	8	3	23
Some college	24	26	43	47	6	7	12	13	1	1	6	7
Trade												
Building trades	94	26	134	37	24	7	66	18	14	4	23	6
Metal trades	64	26	129	52	10	4	22	9	8	3	14	6
Miscellaneous trades	7	25	20	71							1	4

a. Excludes not ascertained and don't know.

Source: Questions 2, 3, 5, and 7.

related instruction, while those who were high school graduates but had no college more often cited improvements in shop training and better supervision. Elementary school graduates also wanted to have better supervision. Wages were a matter of concern for those with some high school and those with come college, but was not mentioned by either of the other two groups.

Differences according to trade are also of interest. Again, as in age groups, approximately 25 percent of all trade categories suggested improvements in shop training, and all were about equally critical of the program. Respondents in miscellaneous trades were more concerned about improvements in related instruction than those in metal trades, while those in building trades were least concerned. By way of contrast, apprentices in building trades were more concerned about better supervision and more wages than were those in metal trades, while respondents in the miscellaneous trades did not mention either of these improvements.

Finally, the apprentices were asked to state their general comments on Wisconsin's apprenticeship program. Their replies are similar in content to their various suggestions for improvements, except that many respondents stated they were satisfied with the program, despite having certain suggestions for improvement. Altogether, 27 percent said they were satisfied with the program, while the remainder replied that they were dissatisfied for one or more of the following reasons: too little opportunity to work in the shop; training period too long; too little emphasis on shop training, too low wages; teaching needs improvement; better instructors needed; and extension of the period of schooling (Table

TABLE 15-9.

Frequently Mentioned Improvements

	Percent
Improvements concerning related instruction	22
Improvements concerning shop training	18
More wages and lower union dues	7
Better supervision by State and joint apprenticeship committees	3
Shorter period of apprenticeship	1
No response	30
Not ascertained	11
Other suggested improvements	8

15-9). Of all respondents, 17 percent commented on the need of some form of improvement in related instruction, whether course content, better qualified teachers, better teaching methods, or whatever.

In a detailed breakdown according to age group, some differences show up. There seems to be increasing concern with improved shop training and improved related instruction with age, and as we move into older age groups, there is less satisfaction with the training program. Respondents made no direct comments on supervision by the Apprenticeship Division, although their comments on the need to improve shop training may have implications for the frequency of inspection and efficiency of supervision by State officials. However, this is only an educated guess.

When the respondent's education is considered, there is increasing comment on the need for improvements in related instruction as the amount of education increases and some indication of less comments on the need for improved shop training. In general, about a third of all respondents

TABLE 15-10.

Comments on Apprenticeship by Respondents' Age, Education, and Trade(a)

Age group	Improve shop training		Increased wages		General improvement		Improve related instruction		Good teachers		Good training		No comment	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
16-17	1	100												
18-19	5	10	2	4	2	4	5	10	2	4	22	43	13	25
20-24	43	13	11	3	15	5	73	23	6	2	125	39	44	14
25-34	25	17	5	3	13	9	32	22	5	3	36	25	24	17
35-44							1	25			1	25	2	50
45-54							1	100						
Education														
Elementary school	1	20					1	20					3	60
Some high school	63	14	15	4	26	6	95	21	9	2	158	35	76	17
High school graduate, but no college	1	9			1	9	3	27	1	9	4	36	1	9
Some college	9	12	4	5	6	8	24	32	3	4	24	32	5	7
Trade														
Building trades	39	13	14	5	11	4	61	21	10	3	109	38	41	14
Metal trades	34	15	4	2	16	7	57	26	2	1	71	32	34	15
Miscellaneous trades	1	4	1	4	5	19	5	19	1	4	7	27	7	27

a. Excludes not ascertained.

Source: Questions 2, 3, 5, and 8.

showed satisfaction with the training program, regardless of education, and very few other comments were made. It is not surprising that as the amount of education increased, expression of views was more free.

Differences according to trade are more apparent. Respondents in metal trades commented more often on improving shop training, improving related instruction, and general improvements, although on the first two points, those in the building trades felt most strongly that they had good training, those in the metal trades somewhat less, and those in the miscellaneous trades least of all. Apprentices in the building and metal trades were noticeably more vocal in their comments than those in miscellaneous trades.

Combining the favorable comments together, and doing the same with the unfavorable comments, the differences stand out more clearly. About 40 percent of respondents in the building trades were satisfied with the program, and only slightly more were dissatisfied (the remainder made no comment). But in the metal trades, only a third were satisfied, while half were dissatisfied. In the miscellaneous trades, about 30 percent were satisfied and about 40 percent dissatisfied.

In conclusion, considering the frequency with which comments and suggestions for improvement of related instruction and shop training were mentioned, it might be of interest to note some of the remarks on these subjects. With regard to related instruction, the respondents said that they were dissatisfied with teaching methods, materials and equipment, and course content. They suggest courses more closely related to work, up-to-date equipment, more night courses, more competent teachers, more varied courses, short courses for fast learners, and more schooling at the beginning of apprenticeship. Suggestions for improving shop training included more individual attention to apprentices in the shop, more specialized training, training in more than one shop, more work with journeymen; more training in the practical application of theory, and field trips to job sites.

CHAPTER 16

THE VIEWS OF APPRENTICESHIP DROP-OUTS

Apprenticeship drop-outs constitute all those apprentices whose indentures have been removed from the active list, whether they have themselves quit or whether they were removed from the program by the action of the Industrial Commission.[1] Between 1911 and 1963, there were a total of 30,445 cancellations from the apprenticeship program, or slightly less than the total number of completions for that period, 32,040 (see Appendix Table A-1).

A high cancellation rate is an indication of the program's weakness. The resulting turnover of manpower is costly to the employer, in terms of money paid out and time lost on partially trained men, and to labor, which loses a potential tradesman on whom time and effort have been spent. The public loses the drop-out's potential skilled services. Perhaps the most tragic of all, however, is the apprentice who fails, because not enough effort was put forth to ensure his success at the trade.[2]

So far as can be determined, the Apprenticeship Division has never made a comprehensive study of the problem of cancellations. However, in 1935, one of its monthly reports presented the following list of reasons given for cancellations: ill health; not suited to the trade; insubordination; return to full-time school; left with the consent of employer; jumped contract; left locality; enlisted in service; dissatisfied with shop conditions and wages; left when laid off; refusal to attend school for related instruction; employer unfair; and miscellaneous. Again, a 1963 monthly report gave a similar list, shown in Table 16-1. The director of the Apprenticeship Division wrote: "During the past six months, we have noted with alarm that the number of apprentice cancellations have become far too dominating a statistic in our monthly report, so much so that even though the number of new apprentices indentured appeared to be a better than normal amount, severe cancellations managed to keep the count at a level basis."[4] It can readily be seen that the two lists differ very little.

The Wisconsin Survey

The objective was to learn from the drop-outs themselves why they had quit before completing their training. It was assumed that, once they had permanently severed their connections with the Apprenticeship Division and other agencies involved, apprentices would speak freely. Questionnaires were mailed to the total of 1,419 apprentices who dropped out of the program between 1958 and 1964 (excluding barbers and cosmetologists).[5] The Apprenticeship Division furnished their addresses, taken from the indentures of these apprentices when they entered the program. As was expected, 370 questionnaires never reached the addresses. Of the 1,049 drop-outs who actually received them, 269, or 26 percent, answered the questionnaires.

All respondents are males (primarily as a result of the exclusion of cosmetologists, the reasons for which are explained in Chapter 14). The majority of them are in their late twenties and early thirties.

TABLE 16-1.

Reasons Given for Cancellations, December 1, 1962, to May 31, 1964

Reason	Number
Employer failure	1
Ill health	3
Death of apprentice	5
Misconduct	1
Jumped contract	2
Left trade	65
Mutual agreement	38
Probationary period	25
Action of Industrial Commission(a)	19
Failure to return after military service	1
Unsatisfactory progress	2
Business discontinued	5
Failure to attend school	8
Left locality	19
Apprentice returned to full-time school	4

a. Indentures cancelled because the Apprenticeship Division was unable to locate the parties involved.

Source: Monthly Report of the Apprenticeship Division, July 1963, op. cit., p. 2.

Very few are below twenty, and the few who are above 45 may be explained by the presence of Korean War veterans indentured during the late 'fifties. Almost all are high school graduates or have at least some high school education. More than 70 percent of the respondents are married, and 60 percent have 2 or more children to support (Table 16-2).

Twenty percent of the respondents stayed in the occupation to which they were apprenticed when they dropped out of the program (Table 16-3). Although it may not be strictly comparable, since it covered only construction trades, a study conducted by the Bureau of Apprenticeship and Training of the U.S. Department of Labor indicated that on the national level, 40 percent of all drop-outs stayed in the same trade. In the

TABLE 16-2.

Distribution by Age at the Time of Indenturing, Education, and Number of Children

	Number	Percent
All	269	100
18-19 years of age	8	3
20-24	75	28
25-34	164	61
35-44	8	3
45-54	8	3
55 and above	3	1
Not ascertained	3	1
Elementary school	11	4
Some high school at least	191	71
Some college	67	25
All married	196	73
No children	35	13
One child	46	17
Two children	54	20
Three children	27	10
Four children	19	7
Five children	5	2
Six children	5	2
Seven or more	5	2

a. Figures in this and following tables are rounded.

Source: Answers to questions 2, 6, and 5, respectively.

Wisconsin study, the fact that the drop-outs were surveyed during the months of May and June may have affected this result, since they were asked to state only their current occupation, and more than half were in unskilled occupations. Among those apprentices who remained in the skilled category, whether the same as or different from that to which they had been apprenticed, automotive occupations, plumbing, and service trades were most popular. In general, the metal and miscellaneous trades were more often chosen than the building trades.

TABLE 16-3.

Current Occupational Status and Distribution by Trade

	Number	Percent
All	269	100
Current occupation same as apprenticed to	54	20
Current occupation different	175	65
Not ascertained	40	15
Current occupation in the building trades	31	12
In the metal trades	47	17
In the miscellaneous trades	41	15
Not in skilled trades	148	55
Not ascertained	2	1
All in the building trades	31	100
Carpenters	7	23
Painters and decorators	3	10
Plumbers	12	39
Sheet metal workers	6	19
Others	3	9
All in the metal trades	47	100
Draftsmen	6	13
Electricians (industrial)	6	13
Maintenance (mechanical)	6	13
Machinists	9	19
Foundry and molders	4	9
Patternmakers	2	4
Tool and die makers and tool makers	4	9
Welders	5	11
Instrument makers	2	4
Others	3	6
All in the miscellaneous trades	41	100
Automotive occupations	15	37
Linemen	2	5
Meat cutters	4	10
Pressmen	2	5
Compositors and printers	2	5
Service trades	11	27
Others	5	11

Source: Answers to question 7 of the questionnaire.

Table 16-4 gives the distribution of respondents according to the current occupation of their fathers or guardians. One-third come from families of skilled workers; altogether, more than one-half come from families headed by blue collar workers.

TABLE 16-4.

Current Occupation of Respondent's Father or Guardian

Occupation	Number	Percent
All	264	100
Professionals	13	5
Farmers	48	18
Managers, officials, proprietors (except farm)	13	5
Clerical and kindred workers	13	5
Salesworkers	5	2
Skilled craftsmen	89	33
Semi-skilled workers, operators, etc.	56	21
Private household and service workers	3	1
Deceased or not in the labor force	16	6
Not ascertained	8	3

Source: Answers to question 8 of the questionnaire.

More than half the respondents earn between $100 and $149 per week. When their weekly income is compared with their current occupation, the results are as expected: the more they earn, the more likely they are to be in occupations that are skilled, professional, managerial, etc. (Table 16-5).[7]

Ninety-eight percent of all respondents indicated why they had left the apprenticeship program. Of these, one-third stated that they did so for reasons relating to their occupation or the working conditions (Table 16-6). "Employer bankruptcy" and "lay-off" were cited by almost a fourth, while one-sixth gave as their reason low wages.

Among reasons relating to the occupation or the working conditions, the following were the most common: the apprentice had to work at jobs other than his indentured one; he had to do "dirty work;" working conditions or the employer-employee relationship was poor; the job was boring and the apprentice found more interesting work; on-the-job instruction was poor; the apprentice did not think the job had any future; and poor or irregular hours. Complaints about the employer's failing to pay correct wages for the work or refusing to pay for the hours spent in vocational schools were classified under "low wages."

Very few apprentices cited personal reasons, being drafted, or reasons relating to participating agencies. Among these last, the following were included: the union failed to help the apprentice when he needed it; the union cancelled the apprenticeship; poor relationships among the employer, the union, the vocational schools, and the Industrial Commission; and the union was too weak to protect the rights of the apprentice.

When the respondents' ages are compared with their reasons for quitting the program (Table 16-7), working conditions and the work itself is important to all groups, although there is some tendency toward less concern as age goes up. On the other hand, ignoring the 18-to-19-year-old group, for which we have only six respondents, there was increasing concern about low wages with age.

TABLE 16-5.

Respondents' Weekly Income and Their Current Occupation

Occupation	$10-49		$50-100		$100-149		$150-199		$200-249		$250 up	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Professional, technical, and kindred workers	1	14			7	5	5	19	2	40		
Farmers					1	1	1	4	1	20		
Managers, officials, and proprietors			1	2	3	2	4	15	1	20		
Clerical and kindred workers			1	2	9	7						
Salesworkers					5	4	4	15				
Craftsmen, foremen, and kindred workers	6	86	29	57	67	51	11	41	1	20	5	100
Operatives			15	29	29	22	2	7				
Service workers			5	10	10	8						
All	7	100	51	100	131	100	27	100	5	100	5	100

Source: Answers to questions 7 and 9. Excludes "not ascertained."

TABLE 16-6.

Major Reasons Given by Respondents for Dropping Out (Percent)

Reasons	1st	2nd	3rd	4th
Related to work or working conditions	33	23	10	5
Personal (ill health, etc.)(a)	10	4	1	1
Related to participating agencies	3	2	2	-
Employer bankruptcy and lay-offs	23	3	1	-
Low wages	16	5	3	1
Drafted into armed forces	3	-	-	-
Others(b)	8	4	2	2
No second, third, or fourth response	-	55	78	90

a. Includes respondents who wanted to continue their education.

b. Includes not ascertained, respondents who wanted to continue their education, and respondents who quit because their G.I. benefits ran out.

Source: Answer to question 10.

Table 16-8 compares the respondents' educational attainments with their reasons for dropping out. As with age, there is a great and nearly equal concern with work and working conditions. However, respondents with some college training were more likely to quit for personal reasons than were other groups. Employer bankruptcy and lay-off and low wages were cited less as educational attainment increased.

The relationship between reasons for quitting and respondents' marital status is examined in Table 16-9. Low wages are of much greater concern to married respondents than to those who are single, while working conditions and personal reasons are more important to single drop-outs.

Drop-outs' present occupations are of interest when compared with

TABLE 16-7.

Reasons for Dropping Out and Age

	18-19		20-24		25-34		35-44		45-54	
	No.	%	No.	%	No.	%	No.	%	No.	%
Work and working conditions	4	67	34	45	65	40	5	42	2	40
Personal	1	17	6	8	20	12	1	8		
Participating agencies			6	8	2	1	1	8		
Employer bankruptcy and lay-off			19	25	38	24	2	17	1	20
Low wages	1	17	6	8	31	19	2	17	1	20
Draft			5	7	3	2				
Others					2	1	1	8	1	20
All	6	100	76	100	161	100	12	100	5	100

Source: Computed from questions 2 and 10.

TABLE-16-8.

Reasons for Dropping Out and Educational Status

	Elementary		Some high school		Some college	
	No.	%	No.	%	No.	%
Work and working conditions	4	40	82	43	24	38
Personal			14	7	14	22
Participating agencies			6	3	3	4
Employer bankruptcy and lay-off	3	30	46	24	12	19
Low wages	2	20	34	18	7	11
Draft			7	4	1	2
Others	1	10	1	1	2	3
All	10	100	190	100	63	100

Source: Computed from questions 6 and 10.

reasons for quitting training; if an apprentice does not like the working conditions in a shop, then he may presumably try to get the same kind of job in a different shop. If, on the other hand, such working conditions are inevitably associated with that particular job, he may take up a different occupation. However, as Table 16-10 shows, the most striking difference in this survey was with regard to personal reasons for quitting; these respondents more often went into a different occupation.

TABLE 16-9.

Reasons for Dropping Out and Marital Status

	Married		Single	
	No.	%	No.	%
Work and working conditions	74	39	35	51
Personal	17	9	11	16
Particiapating agencies	7	4	2	3
Employer bankruptcy and lay-off	48	25	13	19
Low wages	39	20	4	6
Draft	3	2	3	4
Others	4	2		
All	192	100	68	100

Source: Computed from questions 3 and 10.

TABLE 16-10.

Reasons for Dropping Out and Current Occupation

	Same		Different	
	No.	%	No.	%
Work and working conditions	21	40	80	46
Personal	2	4	25	15
Participating agencies	2	4	4	2
Employer bankruptcy and lay-off	12	22	34	20
Low wages	11	20	25	15

TABLE 16-10. (cont')

	Same		Different	
	No.	%	No.	%
Draft	2	4	3	2
Others	3	6	1	1
All	53	100	172	100

Source: Computed from questions 7 and 10.

A further comparison with current occupational status, on the basis of the category into which the drop-out's current work fell, is given in Table 16-11. Here, the most striking difference is in reasons related to work and working conditions. Among those who were in unskilled occupations, a much larger portion had expressed dissatisfaction in these areas. On the other hand, among those who were in skilled occupations at the time of the survey, a noticeably larger share had dropped out because of employer's bankruptcy or lay-offs.

Table 16-12 compares reasons for dropping out with current weekly income. Here, it is interesting to note that as current income goes up, there was a greater incidence of complaints with regard to low wages. Those in the middle income group and among the unemployed more often cited reasons relating to work and working conditions than did those with extremely high or low incomes. On the other hand, personal reasons were given less often by those in the lower middle income group than by those at either extreme or the unemployed. When further comparison is made with the broader groups, employed or unemployed, in Table 16-13, the drop-outs currently unemployed cited personal reasons more often and employer's bankruptcy and lay-offs less often; otherwise, differences

TABLE 16-11.

Reasons for Dropping Out and Current Occupational Category

	Craftsmen, foremen, and kindred		Operators		Others	
	No.	%	No.	%	No.	%
Work and working conditions	48	38	16	33	36	58
Personal	5	4	6	13	8	13
Participating agencies	7	6			2	3
Employer bankruptcy and lay-off	36	29	15	31	7	11
Low wages	19	15	11	23	9	15
Draft	7	6				
Others	4	3				
All	126	100	48	100	62	100

Source: Computed from questions 7 and 10.

TABLE 16-12.

Reasons for Dropping Out and Current Weekly Income (percentages only)

	$10-49	$50-99	$100-149	$150-199	$200-249	$250 up	Unemployed
Work and working conditions	30	43	44	38	40	20	35
Personal	20	9	7	27		20	24
Participating agencies	10		5				
Employer bankruptcy and lay-offs	10	32	23	12	20	40	24
Low wages	10	13	19	19	20	20	12
Draft	20		1				6
Others		2	1	4	20		

Source: Computed from questions 9 and 10.

were small.

The relationship between the family backgrounds of drop-outs and their reasons for quitting apprenticeship are given in Table 16-14. Here, those whose fathers or guardians were farmers, clerical and kindred workers, and salesworkers were more dissatisfied with apprentice wages than those from other backgrounds. Drop-outs from white collar backgrounds cited personal reasons more often than those who were not. Respondents from clerical backgrounds were more dissatisfied with the participating agencies and less concerned about the work itself and working conditions than were others.

TABLE 16-13.

Reasons for Dropping Out and Employment Status

	Employed		Unemployed	
	No.	%	No.	%
Work and working conditions	99	42	11	39
Personal	19	8	9	32
Participating agencies	9	4		
Employer bankruptcy and lay-offs	58	25	3	11
Low wages	39	17	4	14
Draft	7	3	1	4
Others	4	2		
All	235	100	28	100

Source: Computed from questions 7 and 10.

To summarize, one-third of the respondents quit the apprenticeship program because they were dissatisfied with the work itself or with working conditions. The second largest group, nearly one-fourth, quit not because they wanted to, but because either the business closed down or they were laid off; they would, presumably, have continued

TABLE 16-14.

Reasons for Dropping Out and Family Backgrounds

	Professional, etc.		Farmers		Managers, etc.		Clerical, etc.	
	No.	%	No.	%	No.	%	No.	%
Work and working conditions	5	38	17	37	6	42	1	8
Personal	4	31	2	4	1	7	2	17
Participating agencies	1	8	2	4	1	7	2	17
Employer bankruptcy and lay-offs	2	15	5	11	4	29	3	25
Wages	1	8	16	35			4	33
Draft			2	4	1	7		
Others			2	4	1	7		
All	13	100	46	100	14	100	12	100

	Salesworkers		Craftsmen, etc.		Operators		Service workers	
	No.	%	No.	%	No.	%	No.	%
Work and working conditions	3	60	40	47	24	42	2	33
Personal reasons			7	8	5	9	3	50
Participating agencies			1	1	2	4		
Employer bankruptcy and lay-offs			22	26	19	33	1	17
Wages	2	40	11	13	6	11		
Draft			3	4	1	2		
Others			1	1				
All	5	100	85	100	57	100	6	100

Source: Computed from questions 8 and 10.

their training if they had not been laid off or if the business had continued. About one-sixth quit for financial reasons, usually low or inadequate wages.

The BAT Study

The Bureau of Apprenticeship and Training (BAT) of the U.S. Department of Labor undertook a study of the employment status of former apprentices in early 1954.[8] The study included a sample of 894 apprentices "who had discontinued apprenticeships during 1951 or 1952," although the findings were based on the information obtained through interviews from the group of only 512 who provided usable information on their current employment status. The objective of the study was to determine the extent to which apprentices' current employment status was related to their training. A secondary concern was collecting information on why they had discontinued apprenticeship. The sample included apprentices belonging to all different trades--building, metal, and miscellaneous--at the national level.

Thus, the differences between the BAT and Wisconsin studies are as follows: the first is at the national level, and the second covers one State only; methods of data collection were different; the number of respondents in the second study is just a little over one-half the number in the first; determining the reasons for quitting training was the primary purpose of the second and only a secondary concern of the first study; and, finally, ten years passed between the first and second studies. Despite these differences, the results on why appren-

TABLE 16-15.

Comparison of BAT and Wisconsin Studies:
Percentage Distribution of Reasons for Dropping Out

Reasons(a)	BAT Study	Wisconsin Study
Work and work-related reasons	18	33
Employer bankruptcy and lay-offs	23	23
Personal (including family difficulties)	3	10
Financial considerations	47	16
Draft		3
Participating agencies		3
Others	10	12
All	100	100

a. Reasons reported in the BAT study have been reclassified for purposes of comparison.

tices quit training will be compared, since both studies do include this information. Comparison will be limited, however, to the primary reason cited, as in both studies, not all respondents reported more than one reason.

In both studies, 77 percent of the respondents reported that they had quit training voluntarily and 23 percent involuntarily, i.e., they would have continued training had they not been laid off or discharged (or had not the program been discontinued, in the case of the BAT study). As Table 16-15 shows, there is a considerable difference between the percentage of respondents who cited financial reasons for quitting--almost three times as many gave this reason in the BAT study. This difference may be the result of altered economic conditions between the two periods. On the other hand, almost twice as many Wisconsin respondents indicated dissatisfaction with their work or working conditions, and three times as many cited personal reasons.

Both studies indicated that financial reasons were more important to respondents with more dependents. In addition, the BAT study stated, "Persons who discontinued apprenticeship for financial reasons tended to report relatively high increases in wages;" this was true of the Wisconsin study also.

Footnotes to Chapter 16

1. This may include cancellations caused by the death of the apprentice, but it does not include suspensions.

2. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO, Eau Claire, August 15-19, 1949, p. 264.

3. Unpublished chart showing the number of cancellations in each category between 1921 and 1935, Administrative files of the Apprenticeship Division, *op. cit.*

4. Monthly Report, July 1963, Administrative files of the Apprenticeship Division, *op. cit.*, p. 2.

5. Addresses of those apprentices who dropped out prior to 1958 are not available. As of now, the Apprenticeship Division has addresses only for those who dropped out after 1960.

6. Bureau of Apprenticeship and Training, *Apprentice Drop-Outs in Construction Industry* (Washington, 1960).

7. Weekly income before deductions during June 1964, when the survey was taken. A check with the director of the Apprenticeship Division indicates that many of the respondents tend to exaggerate their weekly income.

8. John S. McCauley, "Employment Status of Former Apprentices in Early 1954," *Monthly Labor Review*(July 1954), pp. 751-55.

CHAPTER 17

THE VIEWS OF EMPLOYERS

According to the Industrial Commission, there are some 24,000 employers in Wisconsin who have the resources necessary to train apprentices, yet only 2,600 are actually involved in the State's apprenticeship program.[1] Why such a low proportion participates is important, since this presumably affects the number of apprentices in the program.

The Apprenticeship Division in 1961 undertook a survey of "nearly 1,000 industrial employers who were not participating in the state apprenticeship program...conducted for the purposes of determining the reasons why these particular companies were not utilizing the apprenticeship program to fulfill the skill requirements of their labor force."[2] The findings, based on "casual contact" by field officials, yielded the following results: "a. Business is not good enough at the present time to justify the addition of an apprentice to our payroll; b. We have little turnover and have no need to add to our skilled forces; c. Our bargaining agreement is not favorable towards hiring an apprentice; and d. We seldom need skilled men as most of our operators do not require a high degree of skill."[3] Thus, implicitly, the costs involved and union restrictions were stated to be the most important reasons for not participating in apprentice training. However, this survey was limited to those employers who did not participate and, further, to industrial employers; building and miscellaneous trades employers were not included.

In addition, the views of those employers who did participate were collected in 1914, prior to the 1915 amendment of the Apprenticeship Law of 1911 (see Chapters 2 and 5). Also, some employers and/or their representatives have presented their views at various conferences and committee meetings. However, all these studies and expressions of viewpoints do not fulfill the need for ascertaining the views of employers who are currently participating in the apprenticeship program, who are in a better position to suggest improvements. In particular, it is important to know why they are not training more apprentices than they do at present, as well as their comments on the program.

Questionnaires were mailed to 1,118 employers, of which 457, or 41 percent, responded. The mailing list included all 196 employers in the metal trades and all 167 employers in the miscellaneous trades who employ apprentices, because of the small number of participating employers in these two trades categories. The remainder were building trades employers, a selective sampling of the total number, which runs into the thousands.[4] Table 17-1 shows the distribution of building trades employers on the mailing list by trade and by city. Nearly half of the building trades employers were located in Milwaukee and about one-seventh in Madison.

Table 17-2 gives the number and proportion of employers in various trade categories on the mailing list and who responded. The response of building trades employers was less than one-third, but because they made up almost 70 percent of the mailing list, they constituted a little over one-half of all respondents.

TABLE 17-1

Distribution of Building Trades Employers Included in the Mailing List by Their Trades and by Cities

	Milwaukee	Madison	Appleton	Eau Claire	Green Bay	Janesville	Kenosha	La Crosse	Racine	Superior	Wausau	Total
Bricklayer	21	12	7	3	3	2	3	2	9	1	2	65
Carpenter	90	37	5	3	7	7	10	9	8	7	2	185
Electrician	58	19	10	4	10	9	9	10	8	4	3	144
Painter	29	8	2	3			7		7	4		60
Plumber	63	16	17	6	12	6	6	7	16	5	4	158
Sheet Metal Worker	46	10	6	4	4		8		3	1	5	87
Steam Fitter	34	7	3	2	6	1		3				56
All	341	109	50	25	42	25	43	31	51	22	16	755

The largest proportion--one-fourth--of respondents are located in cities with 25,000 to 49,999 population (Appleton, Beloit, Eau Claire, Fond du Lac, Janesville, LaCrosse, Manitowoc, Oshkosh, Sheboygan, Superior, Waukesha, and Wausau). About one-fifth of the returns are from Milwaukee, and about one-sixth from the 50,000 to 99,999 population bracket (Green Bay, Racine, Kenosha, Wauwatosa, and West Allis). See Table 17-3.

TABLE 17-2.

Proportion of Employers Included in the Mailing and of Returns by Trades

	Mailing		Returns		Rate of return
	No.	%	No.	%	
Building trades	755	68	242	53	32
Metal trades	196	18	116	25	59
Miscellaneous trades	167	14	98	21	59
Not ascertained			1	1	
All	1,118	100	457	100	41

TABLE 17-2 (cont')

Source: Answers to question 3 in the questionnaire.

TABLE 17-3.

Distribution of Respondents by the Location of Their Head Offices

Population	No.	%
Below 2,500	31	7
2,500 to 9,999	42	9
10,000 to 24,999	46	10
25,000 to 49,999	115	25
50,000 to 99,999	72	16
100,000 to 249,999 (Madison)	45	10
250,000 and above (Milwaukee)	102	22
Not ascertained	4	
All	457	100

Source: Answers to question 2.

Table 17-4 gives various information about the respondents. More than two-fifths employed less than 10 skilled workers, while another fifth employed 10 to 20. Only one-tenth employed 70 or more. Similarly, more than two-fifths have one apprentice in training,another fifth have two apprentices, and one-tenth have three. Further, seven-tenths of the respondents have trainees in just one occupation.

The respondents' participation in the apprenticeship program is shown in Table 17-5. Slightly over half of them participated before 1950; the remainder did not. Of those who were participating in 1950, more than a third trained just one apprentice. Thus, while there seem to be many relative newcomers to the program, the implication is that they are owners of smaller firms and can thus train fewer apprentices

TABLE 17-4.

Distribution of Respondents by Various Criteria

	No.	%
Number of skilled workers employed		
1-9	203	44
10-19	95	21
20-29	34	7
30-39	27	6
40-49	17	4
50-59	17	4
60-69	8	2
70 and above	47	10
Not ascertained	9	2
Number of apprentices in training at present		
None	27	6
1	205	45
2	90	20
3	44	10
4	23	5
5-9	42	10
10 and above	23	5
Not ascertained	3	
Number of occupations in which apprentices are trained		
None	27	6
1	326	71
2	59	13
3	16	4
4 and above	21	5
Not ascertained	6	1

Source: Answers to questions 4, 5, and 6 or the questionnaire.

than ever before. The reasons given for training fewer or more apprentices than before are presented in Table 17-6. Of those who trained more, better than half cited business expansion as the major reason; lack of business was given as the major reason by the majority of those who employed fewer apprentices; only very small percentages cited automation, cost, dissatisfaction with union policies, lack of qualified youths, or lack of journeymen.

TABLE 17-5.

Distribution of Respondents by Previous Participation

	No.	%
All	457	100
Participated before 1950	244	53
Did not participate before 1950	209	46
Not ascertained	4	1
Number of apprentices in training in 1950		
1	88	19
2	63	14
3	25	5
4	19	4
5	7	2
6	7	2
7 and above	21	4
Inappropriate	216	47
Not ascertained	11	2

Source: Answers to question 7 in the questionnaire.

Employers were asked to state their reasons for not training more apprentices than they were currently doing. Their answers centered mainly around three factors: high costs, business conditions, and union restriction (Table 17-7). They felt costs were high as a result of many factors: training programs were too long; wage rates were too high; they had to pay wages for attendance at classes in related instruction; and too much paper work. Many employers specifically stated that they hesitated to bear the high costs of training when they had no guarantee that the apprentice would stay in their shop after the completion of his training.

TABLE 17-6.

Reasons Given for Training More or Fewer Apprentices in 1964 than in 1950

	First		Second	
	No.	%	No.	%
More apprentices				
More journeymen in shop--apprentice ratio up	30	6	5	1
Availability of training facilities	26	6	7	2
Greater need for skilled workers now	25	6	3	1
Greater volume of work in shop	24	5	3	1
Unavailability of skilled workers, hence train apprentices	8	2	1	(a)
All	113			
Fewer apprentices				
Lack of journeymen in shop--apprentice ratio low	19	4	2	1
"Automation"--less need for skilled workers	16	4	1	(a)
Smaller volume of work	14	3	1	(a)
Lack of youths for training	7	2		
Too expensive to train apprentices	4	1	1	(a)
Dissatisfied with union policies	4	1		
All	64			
Others				
Depends on work in the shop	16	4	1	(a)
In business only after 1950	51	11	1	(a)
Training apprentices for the first time in 1964	11	2	10	2
No change in number of apprentices	73	16	290	63
Not ascertained	129	27	124	27

a. Less than 1 percent; omitted.

Source: Answers to question 8.

Under business conditions, many cited a small shop workload and lack of adequate space and/or personnel. Very few gave automation as a reason for not having more apprentices. As for union restrictions,

TABLE 17-7.

Distribution of Respondents' Reasons for Not Hiring More Apprentices

	First		Second		Third	
	No.	%	No.	%	No.	%
Training costs	70	15	58	13	30	7
Union restrictions	140	31	28	6	11	2
Business conditions, automation, lack of facilities, etc.	177	39	74	16	11	2
Lack of suitable candidates	25	5	45	10	20	4
Other reasons	4	1	6	1	6	1
No second and third response and don't know	1		206	45	338	74
Not ascertained	40	9	40	9	41	10

Source: Answers to question 8 of the questionnaire.

TABLE 17-8.

Rank Order of Reasons Cited by City Size

City size	Costs	Union	Business	Lack of youths	Other
Less than 2,500	3*	2	1	3*	4
2,500-9,999	3	2	1	4	
10,000-24,999	2	3*	1	3*	4
25,000-49,999	3	2	1	4	5
50,000-99,999	3	2	1	4	5
100,000-249,999	3	1	2	4	5
250,000 and above	3	1	2	4	

* Indicates tie

Source: Computed from questions 2 and 9.

the policy most objected to was the journeyman-apprentice ratio. Very few employers complained about a lack of qualified youths for apprenticeship.

There was some variance according to the size of the city in which the respondent was located. Most employers in cities other than Madison and Milwaukee cited lack of business as the most important factor preventing them from training more apprentice; in Madison and Milwaukee, union policies were most often listed first, and business conditions second. Regardless of city size, most employers ranked the costs of apprentice training third (Table 17-8).

There were also differences in the rank order of reasons cited according to how many apprentices were being trained. Business conditions were most important to those who trained less than four apprentices, while union restrictions were most important to those who trained four or more. As with city size, training costs ranked third with most employers (Table 17-9).

TABLE 17-9.

Rank Order of Reasons Cited by Number of Apprentices Trained

Number of apprentices trained	Costs	Union	Business	Lack of youths	Other
None	2*	2*	1	4	5
1	3	2	1	4	5
2	3	2	1	4	
3	3	2	1	4	
4	3	1	2	4	
5-10	3	1	2	4	
11 and above	3	1*	1*	4	

* Indicates tie.

Source: Computed from questions 5 and 9.

There were no essential differences when the rank order of reasons were distributed according to the number of skilled workers employed by the respondents. However, as Table 17-10 shows, there was some variation when they are arranged according to the number of different occupations in which the respondents trained apprentices. Union restrictions were the most important reason to employers who trained apprentices in three or four occupations, while business conditions were most important to those who trained in less than three or more than four occupations. Also, those who trained apprentices in six or more occupations found training costs to be a primary factor, although it was of tertiary importance to most other employers.

TABLE 17-10.

Rank Order of Reasons Cited by Number of Occupations in Which Apprentices are Trained

Number of occupations	Costs	Union	Business	Lack of youths	Other
None	2*	2*	1	4	5
1	3	2	1	4	5
2	3	2	1	4	
3	3	1	2	4	
4	3*	1	3*	2	
5	3	2	1		
6-12	1*	3*	1*	3*	

* Indicates tie.

Source: Computed from questions 6 and 9.

When respondents are compared on the basis of whether they became involved in the apprenticeship program before or after 1950, the rank order of reasons cited is the same: business conditions first, union restrictions second, and training costs third. However, something else of interest emerges: employers who have been training apprentices over a longer period more often cited union restrictions as a deterrent than did those who have been training over a shorter period, while the latter showed somewhat greater concern with training costs and business conditions than did the former. Nonetheless, the differences were not large, as indicated in Table 17-11.

TABLE 17-11.

Distribution of Reasons Cited by Length of Respondents' Participation in the Apprenticeship Program

Participation	Costs	Union	Business	Lack of youths	Other	Total
Before 1950	15	36	41	7	1	100
After 1950	19	30	44	5	2	100

Source: Computed from questions 7 and 9.

The respondents' emphasis on different reasons varies according to their category (Table 17-12). While all three show about equal concern with training costs, employers in the building trades much more often cite union interference (particularly the journeyman-apprentice ratio) and much less often business conditions than those in the metal and miscellaneous trades.

TABLE 17-12.

Distribution of Reasons Cited by Respondents' Trade Category

Category	Costs	Union	Business	Lack of youths	Other	Total
Building trades	15	40	38	5	1	100
Metal trades	18	27	46	8	1	100
Miscellaneous trades	18	26	49	5		100

Source: Computed from questions 3 and 9.

Respondents were asked to comment freely on the Wisconsin apprenticeship program, and the results are shown in Table 17-13. Almost one-fourth said they were satisfied, that the program was a "good" one. Only 4 percent expressed specific dissatisfaction, usually because apprenticeship is too long in many occupations, because the program has too many rules, or because it is too expensive. The following improvements were suggested by about 5 percent each: more pre-apprenticeship training, more specialized instruction, more apprentices, and reducing union control and interference. If these are included with the dissatisfied, then the proportion who criticize the program as it is today increases to a little over one-fourth.

TABLE 17-13.

Respondents' Views of the Wisconsin Apprenticeship Program

	No.	%
Satisfied--good program	103	23
Dissatisfied--bad program	20	4
Pre-apprenticeship training needed	26	6
More specialized instruction	29	6
More apprentices needed	25	5
Too much union control and interference	21	5
No comment	66	14
Not ascertained	167	37
All	457	100

Source: Answers to question 10.

When the respondents' views are compared on the basis of city size, definite differences emerge. Milwaukee employers were least and Madison employers most vocal in their criticisms; employers from Milwaukee were more often satisfied with the program than were those from all other cities and from Madison. Madison employers were greatly concerned with the need for more apprentices. Employers in all other cities suggested reducing the degree of union control somewhat more often than did those from Madison or Milwaukee (Table 17-14).

TABLE 17-14.

Distribution of Respondents' Views by City Size

Location	Good plan	Bad plan	More spclzd. instr.	More appr.	Pre-appr. trng.	Too much union	N.C.
Milwaukee	44	4	9	6	10	4	22
Madison	30	10	10	33	7	7	3
All other cities	37	8	12	7	10	9	18

Source: Computed from questions 2 and 10.

TABLE 17-5.

Distribution of Respondents' Views by Trade Category

Category	Good plan	Bad plan	More spclzd. instr.	More appr.	Pre-appr. trng.	Too much union	N.C.(a)
Building trades	32	6	9	11	12	10	20
Metal trades	40	5	11	8	5	7	23
Miscellaneous trades	36	11	6	11	5	2	30

a. Includes not ascertained.

Source: Computed from questions 3 and 10.

As is shown in Table 17-15, respondents in the metal trades were more favorable to the program than those in the miscellaneous trades and building trades. Employers in the metal and building trades somewhat more often suggested more specialized training, while employers in the building trades were more concerned with pre-apprentice training and the degree of union control and in general were more vocal in their criticisms.

Table 17-16 presents the distribution of employers' views of the Wisconsin apprenticeship program according to the length of time they have been involved in it. Those who had participated before 1950 were considerably more satisfied with the program than those who have only become involved in recent years. The more experienced respondents showed a greater concern for the need for more apprentices, while the less experienced more often suggested the need for more specialized training and less union interference.

TABLE 17-16.

Distribution of Respondents' Views by Length of Participation

Participation	Good plan	Bad plan	More spclzd. instr.	More appr.	Pre-appr. trng.	Too much union	N.C.(a)
Before 1950	42	5	10	7	11	5	22
After 1950	27	9	8	14	6	10	26

a. Includes not ascertained.

Source: Computed from questions 7 and 10.

To summarize, the three most important factors that prevent respondents from hiring a greater number of apprentices are unfavorable business conditions, the high cost of apprentice training, and union interference, in the form of strict journeyman-apprentice ratios; there were some variations in the order in which these factors were cited when the respondents were compared on different bases. About one-fourth were satisfied with the program, and slightly more than that were dissatisfied or had specific suggestions for improvements in it. Madison employers were particularly critical, especially with regard to the need for more apprentices.

Footnotes to Chapter 17

1. Speech by Mr. C. T. Nye, op. cit.

2. Monthly Report, September 1963, Administrative files of the Apprenticeship Division, op. cit., p.1.

3. Ibid., p. 2.

4. The exact number is not available. Selective sampling was adopted for the following reasons. First of all, there is no separate file of employers; the only way to obtain their names is from the individual files of each apprentice, and there is no indication given in the indenture of how many apprentices they are training in how many occupations. Second, there are many more apprentices in the building trades in Milwaukee and Madison than in the other cities and towns of Wisconsin. Third, apprentices in the building trades are sometimes indentured to joint committees, who in turn assign them to different employers. Since we wished to have, as nearly as possible, a balanced distribution between employers who trained few and many apprentices, in few and many occupations, and since we wished to exclude the joint apprenticeship committees, preferring to obtain the views of the actual employers, employers in eleven selected cities were chosen and the questionnaire mailed to them.

CHAPTER 18

CONCLUSIONS AND RECOMMENDATIONS

In 1928, the Industrial Commission gave, as the objectives of the Wisconsin Apprenticeship Law, "(a) to assist in the development of better trained workers for the trades (and not necessarily more of them), and (b) to act as a protective measure for minors entering the trades."[1] When the Industrial Commission adopted its new apprenticeship manual in 1956, the phrase "not necessarily more of them" was omitted.[2] The implication seems to be that it had become interested in increasing the supply of workers, as well as assuring that they were well trained. Any evaluation of the apprenticeship program should be made in terms of these objectives.

To Protect Minors Entering the Trades

The use of apprentices as cheap labor was one of the factors that led to the passage of the 1911 law (see Chapter 2) and the establishment of apprentice registration and periodic inspection of their work places by officials of the Apprenticeship Division. Registration is meaningful only if the Apprenticeship Division maintains close contact with the apprentice, and this can only be accomplished if the field supervisors meet the apprentices as often as possible. There is no statutory requirement regarding the number of visits by field supervisors, and the present practice of meeting apprentices once a year or so leaves room for many things to go wrong between visits.

In addition, the manner in which such visits are made may also affect their results. If the supervisor meets an apprentice in the office of his employer, the apprentice may be reluctant to speak out. On the other hand, if the supervisor meets the apprentice privately, then the latter may tend to make unfounded complaints against his employer. Thus, the problem of supervision is a delicate one, involving the rights and responsibilities of two different interest groups, and the supervisor must be capable of handling them carefully, so that he does not sacrifice the interests of one in favor of the other.

In the light of the above, the opinions expressed by current apprentices and apprenticeship drop-outs are of interest. In general, the former say they are satisfied with the supervision they receive. However, almost one-fourth recommended improvements in shop training, and well over a third suggested that related instruction could be better. Thus, although only a small percentage of respondents specifically stated that better supervision was needed, their comments and criticisms centering around their work and working conditions indicate such a need, for it is the duty of the Apprenticeship Division to ensure that apprentices are to a reasonable extent satisfied with their working conditions. Similarly, only a few drop-outs directly criticize the performance of the Apprenticeship Division, but many imply it when they express their dissatisfaction with their working conditions. Accordingly, the following changes are recommended.

(1) The field supervisors of the Apprenticeship Division should contact apprentices more often, at least four times a year. Here,

the recommendation of the former State Supervisor of Apprenticeship, Stewart Scrimshaw, is worth noting: "Boys (apprentices) should be seen in the shop about once a month and their experience checked up. Acquaintanceship should be cultivated with the foremen and the superintendents and every assistance possible rendered with a view to making suggestions to the employers should cases of injustice be found. However, the deputy shop supervisor should not take up any complaint with the employers, but should bring the data to the office and the employers interviewed by the supervisor of apprenticeship, or in a manner as he may direct, so as to establish a systematic, consistent and less irritating policy of dealing with the employers. A very great part of the success of an apprenticeship system must depend upon the character of the shop supervision."[3]

(2) The present practice of interviewing the apprentice in the presence of his employer does not seem to be conducive to free and frank discussion of problems and should be changed to allow full discussion of complaints between the apprentice, the employer, and the field supervisor.

(3) Field supervisors must have in-service qualifications giving them understanding and insight into the problems between apprentices and their employers. They must make inspection more meaningful to both parties.

(4) Field supervisors must be made more responsible for the welfare

of apprentices, and where joint apprenticeship committees do not exist or do not function effectively, the supervisor must accept sole responsibility for apprentices' welfare.

To Develop Better Trained Workers

The fact that apprenticeship supplies less than 50 percent of Wisconsin's skilled labor (see Chapter 13) indicates that the apprenticeship program has not succeeded in realizing its second objective. There are two reasons for this: (1) the number of new registrations is smaller, and (2) the number of cancellations has grown in most trades. To remedy this, greater participation by employers in the training program must be achieved, so that the number of newly indentured apprentices may be increased, and the number of drop-outs must be reduced to a minimum. The sections below consider these two needs in the light of the survey findings.

To Evoke Greater Participation by Employers

Apparently, employers would be willing to train larger numbers of apprentices, given favorable business conditions, reductions in the costs of training, and a more liberal journeyman-apprentice ratio. Improving business conditions is the function of all levels of government, and making suggestions to that end falls beyond the scope of this paper. However, the need for a study of the relationship between the magnitude of apprenticeship activities in the State and[4] the changes in its economy relevant to apprentice training is clear.

The primary complaints about training costs are two: (1) employers are required to pay wages for the hours apprentices spend in school for related instruction; and (2) the training period in many occupations is too long. In addition, employers are concerned about the lack of any guarantee that apprentices will stay with them after completing training.

The present laws on apprentice training make no distinction between different types of employers: the small as well as the large one must pay for related instruction for all his apprentices. Similarly, they do not distinguish between an employer who has been training apprentices over a long period of time and a newcomer to the program, nor between those who undertake training in a variety of occupations and those who train apprentices in only one or a few occupations. Differential treatment could encourage employers to remain in the program, once they have entered it; to train larger numbers of apprentices; and to train them in many occupations. "As an inducement to employers to assume the task of apprentice training, the various units of Government through Contracts for Government work can provide a requirement for the hiring of apprentices based on standards and criteria to be followed, such as a specific number of apprentices for a given dollar value of Contract."[5]

In order to encourage employers to train larger numbers of apprentices, it has been suggested that they be given special tax rebates and/or some form of subsidy, with a tax levied on all who employ skilled workers but do not train apprentices, to provide a fund to help those who do participate in the program. "The whole subject of employers' responsibility demands more attention than is being given it nowadays. No employer can be sure when he takes an apprentice that it is his firm that will benefit. Nonetheless, we still affect to believe that employers should go on training craftsmen with little reward, present or prospective...one is forced to say--the concept is not now working very satisfactorily."[6]

To Reduce the Number of Cancellations

The drop-outs themselves give the following as the most important factors in their decisions to leave the apprenticeship program: (1) dissatisfaction with their work and/or working conditions; (2) liquidation of employer's business and/or lay-offs; and (3) low wages and other financial reasons.

In the Wisconsin apprenticeship program, it is the responsibility of the local and/or area joint apprenticeship committees to look after the welfare of apprentices in their work places, and if these committees fulfilled their objectives more effectively, complaints about working conditions and hours, having to do "dirty work," having to do work other than that for which they were indentured, poor employee-employer relationships, and poor on-the-job training would be greatly reduced. (The cancellations resulting from these complaints would also be reduced if the Apprenticeship Division's field supervisors were more active, as indicated above.) Where committees do not exist, they should be formed; where they exist but do not function, they should be activated; and motivation should be provided for their members to function more effectively. The committees should be legally required to conduct a certain minimum number of meetings and send the minutes of these meetings to the Apprenticeship Division within a specified time. 7 If they fail to send such reports, then the director of the Apprenticeship Division should make attempts to constitute new committees.

Since cancellations also occur because apprentices find their jobs boring or do not feel they have any future, there is a need for much better and stricter selection methods, designed to match the right individual to the right occupation. Here, too, the joint apprenticeship committees can play a much more active and useful role, for they are to a large extent reponsible for the selection of candidates. In addition, a much better system of guidance and counselling must be provided to prospective apprentices, so that they may learn in advance what will be expected of them.

The problem of cancellations created by business liquidation and lay-offs can be reduced as follows: if an employer wants to employ an apprentice, his capacity to provide adequate training and his prospects for remaining in business must be established in advance. Here the local committees and the Apprenticeship Division must jointly shoulder responsibility. Also, careful joint planning and mutual agreement among area business concerns and joint committees with regard to employing apprentices would help to reduce lay-offs.

Though financial reasons rank third in importance, they are still a significant factor in causing cancellations, particularly among apprentices who are married and have large families to support. The establishment of loan funds, created individually or jointly by the employer, the union, the trade organization, the local committee, and/or the State and similar to those provided by colleges and universities, would help to reduce the importance of this problem. In addition, many drop-outs who quit for financial reasons point out that their wages should be based, not upon the wages of the journeymen in their occupations, but upon the cost of living. This seems to be a reasonable request, and it deserves consideration.

Personal reasons are important factors in cancellations by younger apprentices, those with some college education, and those who come from professional families. This problem could be alleviated if they were given proper guidance and counseling before and during their apprenticeship.

The apprentices themselves must be given more opportunities to express their views, perhaps in the annual apprenticeship conferences or any other appropriate assembly of those interested in the program. Exit interviews might also be of help, whenever and wherever they are feasible.[8] The reinstatement of the journal, Wisconsin Apprentice, published by the Apprenticeship Division during the 'twenties and 'thirties, is worth considering. It would serve as a forum for all who are interested in the program; it would help boost the morale and status of the apprentices; and it would help to popularize the idea of apprenticeship training.

Other measures may be undertaken. Many benefits are claimed for a program of pre-apprentice training; it provides a chance for many intelligent high school students, who otherwise might have settled for rather unskilled jobs, to become acquainted with the opportunities in skilled trades; employers may be more willing to hire someone who has at least rudimentary knowledge of the trade, to reduce costs resulting from damaged materials and loss of time; it may help shorten the period of training after formal indenture, which in turn may help increase completion rates; it acquaints youths with the trades they are entering before apprenticeship, thereby reducing cancellations by those not suited to the job; and finally, it is claimed, pre-apprenticeship training is an organized approach to hiring.[9]

The duration of apprenticeship training may be reduced, at least in some occupations. The training period for many occupations is the same as it was some fifteen years ago, despite improvements in general education standards and teaching methods, and despite the fact that many occupations stipulate that only high school graduates are eligible for apprenticeship. If an engineer can be trained in four years, why must a motor mechanic, for example, serve a five-year apprenticeship?[10] In addition, other trades may try practicing flexibility in the number of years of training required, according to the individual apprentice's abilities, as the typographical union does.[11]

Apprenticeship as a Labor Market Device

As noted earlier, the apprenticeship program provided less than half of Wisconsin's skilled workers during 1941-50, and still a smaller part during 1951-60. The fact that workers can attain journeyman status without undergoing apprenticeship (see Chapter 4) indicates a basic contradiction in the attitude of those institutions that participate in the apprenticeship program, especially the unions. By allowing untrained or partially trained workers to attain journeyman status when demand for skilled workers exceeds the supply, unions undermine not only the apprenticeship program, but also skill levels. Yet it is difficult for them to avoid this practice, for two reasons. First, there is the unions' own insistence on long periods of training, set decades ago, in many cases. Second, with one or two exceptions, such as the typographical union, few locals have the necessary resources and willingness to undertake a study of supply of and demand for skilled workers.

The Apprenticeship Division and the employment services can make a contribution here. They can conduct periodic surveys to determine the supply of and demand for skilled workers in different local market areas. However, this alone will not solve the problem of matching supply and demand. As long as the unions insist on high journeyman-apprentice ratios, without regard to the changing needs for skilled workers, information about supply and demand is of little use.

Apprenticeship as a Weapon against Structural Unemployment

In recent years, apprenticeship has been cited as a means of reducing excessive unemployment rates caused by the lack of saleable skill.[12] If it is to function as a weapon against structural unemployment in Wisconsin, certain steps must be undertaken. First, the objectives of the program must be restated to include the development of an adequate supply of skilled manpower to meet the needs of today's industry and a policy statement incorporated that apprenticeship training forms "part of an over-all national manpower and training effort."[13] Second, training must be dovetailed with industry's technological progress in such a way that it can produce an adequate number of journeymen with such skills as are needed.[14] This would require the following measures: (1) a census of all minors engaged in industry, to ascertain the number and relative supply of potential apprentices; (2) a systematic determination and listing of all shops able to train apprentices; (3) a designation of all trades and occupations where apprenticeship is possible; (4) a study to specify which skills are becoming obsolete and which are in demand and have a good future; (5) a periodical revision of the training offered, to correlate it with whatever changes occur in industry's production processes. This last could be done in cooperation with the State-wide Policy Advisory Committees; it must become one of the key activities of the Apprenticeship Division.

To accomplish these steps, the status of the Apprenticeship Division, which at present functions only as a promotional and supervisory agency, and to some extent acts as a barometer of the pressures of different interest groups, must be changed. It must initiate and carry out programs of skill development in cooperation with other State agencies, such as the employment services and the State Board of Vocational Education, in order to make the apprenticeship program a meaningful and rational device to meet labor market problems. It must also undertake research on problems such as drop-outs, apprentice mobility, etc. This will involve a major change in the philosophy of apprenticeship as it was originally conceived in Wisconsin. The change is justified: when voluntarism fails to meet the needs of the larger society, then the State must assume greater responsibility for doing what others have failed to do.

Finally, a periodic evaluation of the performance of the Apprenticeship Division in fulfilling its goals and of the relevance of those goals must be undertaken.

Proposals for Further Research

(1) The voluntary nature of Wisconsin's apprenticeship program is based on certain assumptions: local problems should be solved locally, and the interested groups must join together and deal with them. The local and/or area joint apprenticeship committees form the cornerstone of apprenticeship in Wisconsin. Yet there is no adequate information on the number of these committees and on their efficiency in promoting and maintaining apprenticeship training. There is a need for a study of the role played by these committees and the extent to which they participate in the selection of apprentices, their effectiveness in different trades, and their role as the local guardian of the apprentice in training.

(2) Candidate selection plays an important role in cutting down the number of drop-outs. The exact relationship between the performance

of apprentice candidates in the various tests administered to them by the vocational schools or the employment services and their propensity to quit training after being indentured is not known. A study of this may be helpful in dealing with the problem of cancellations as a result of dissatisfaction with the occupation.

(3) Employers are reluctant to have apprentices because, they contend, apprentices desert them after training and seek employment in bigger companies. This complaint is particularly common among the smaller employers. A study of the mobility of apprentices in Wisconsin should help to settle the validity of this claim.

(4) Employers also contend that the high costs of training and the uncertainty of benefits prevent them from hiring larger numbers of apprentices. As a step towards the reduction of training costs, the need for the long training periods in many occupations should be studied, in light of the educational attainment of candidates admitted to the program today; their work experience; their age; the changing techniques for teaching adults; and industry's technological progress and demand for new skills in different occupations.

(5) The extent of union control over apprenticeship training should be quantitatively determined, and their attitude towards the duration of training should be examined with reference to apprenticeship as a labor market device.

(6) Both current apprentices and drop-outs expressed their dis-

satisfaction with the related instruction offered to them. In some cases, courses not really useful were given; teachers were said to be poor; the courses taught did not always coincide with what apprentices were doing in the shop. These complaints indicate a need for an examination of the content and methods of providing apprentices with related instruction, with a view to determining whether or not related instruction helps to develop those skills required by employers. The role of the Joint Advisory Committees and their effectiveness in making instruction up-to-date should also be studied.

(7) An examination of the role played by high school guidance counselors in the promotion of apprentice training among high school graduates is also worth undertaking.

Some Technical Changes to Aid Research

As suggested above, the Apprenticeship Division should play an active role in making apprenticeship not just a protective umbrella for trainees, but also a labor market device. It must undertake its own research projects on matters related to apprenticeship and other manpower problems. As a pre-condition for this, the following technical changes are necessary:

(1) At present, no one keeps a list of candidates who apply for apprenticeship, and there is no way of determining how may candidates are waiting to become apprentices or any information as to their racial, educational,and family backgrounds. It would

be useful if the Apprenticeship Division developed an arrangement for collecting this information, particularly for investigating charges related to racial segregation and the operation of "grandfather clauses" in the selection of candidates.

(2) The results of the various tests administered to candidates should be collected and filed with the Apprenticeship Division, to facilitate research on the problem of drop-outs. At present, they are scattered all over the state, in the hands of vocational schools, employment agencies, joint apprenticeship committees, and employers.[15]

(3) The current indenture form could be improved to include the following information: the exact educational status of the apprentice; his marital status; the size of his family; the occupation of his father or guardian; the name of the party who sponsored him for apprenticeship.

These and other technical changes needed to make apprenticeship more effective as a labor market device are possible only when there is greater coordination and cooperation among the different vocational schools, the State Board of Vocational Education, the employment services all over the State, the unions, and the large number of employers who participate in the program. Any one of these may resist changing the traditional way of doing things. However, experiments are worth trying, for that which fails to adapt itself to changing circumstances is bound to deteriorate and die in a ceaselessly changing world.

Footnotes to Chapter 18

1. Industrial Commission, Apprenticeship Law with Explanations, op. cit., p. 6.

2. Industrial Commission, Apprenticeship Manual (1956), op. cit., p. 1.

3. In an unpublished paper, "Tentative Program for Apprenticeship Development in Wisconsin," January 1, 1917, Administrative files of the Apprenticeship Division, op. cit.

4. There is a study on economic change and apprenticeship activity at the national level. See Bureau of Apprenticeship and Training, Apprenticeship and Economic Change (Washington, 1964).

5. Draft Report of Working Group on Youth Work and Youth Education, Sub Committee of the Seminar on the Education of the Difficult Thirty Percent, Endicott House, Massachusetts Institute of Technology, September 1963, p. 9.

6. H. A. Bland, "Apprenticeship--Can We Expect It to Supply the Need for Skilled Workers," Journal of Industrial Relations (April 1961), p. 13.

7. The proposed revision in the Oregon Apprenticeship Law (1965) included a provision that "a copy of the minutes of each meeting (conducted by the JAC) shall be sent to the Commissioner of the Bureau of Labor." See: Paragraph 3, Section 18, House Bill 1167, April 2, 1965, introduced by Representative Kennedy and others in the 53rd Legislative Assembly, Regular Session.

8. The Milwaukee Vocational School seems to have done this sporadically, if not consistently; other schools may follow suit.

9. Edward E. Goshen, op. cit., pp. 29-30.

10. H. A. Bland, op. cit., p. 9.

11. Minutes of the Apprenticeship Conference of the Wisconsin State AFL-CIO (1961), op. cit., pp. 2-3.

12. George B. Strauss, op. cit.

13. Martha F. Riche, "Public Policies and Programs--An Assessment of Apprenticeship," Monthly Labor Review (February 1964), p. 143.

14. The first three recommendations are taken from the unpublished paper by Stewart Scrimshaw, op. cit.

15. The writer's attempt to collect them failed. With the exception of the Milwaukee Vocational School, others found it difficult to collect them, and above all, they were unwilling to release them.

LIST OF APPENDIX TABLES

Appendix Table	Title	Page
A-1	Yearly Apprenticeship Transactions in Wisconsin, 1911-63	233
A-2	Yearly New Registrations by Trades, 1940-62	236
A-3	Yearly Completions by Trades, 1940-62	236
A-4	Yearly Cancellations by Trades, 1940-62	238
A-5	Total Apprenticeship Transactions by Trades, 1911-63	239
A-6	Annual Average of New Registrations, Completions, and Cancellations, by Decades, 1911-60	239
A-7	Employment and Supply of Skilled Workers through Apprenticeship in Wisconsin, 1940 and 1960	240
A-8	Wisconsin Employers Participating in the Apprenticeship Program in Selected Years	242
B-1	Yearly Apprenticeship Transactions in the Building Trades, 1911-62	243
B-2	New Registrations and Completions in and Ranks of Selected Occupations in the Building Trades, by Decades, 1911-62	245
B-3	Total New Registrations and Completions in the Building Trades, 1940-62	249
B-4	Percentage of Completions to New Registrations in Selected Occupations of the Building Trades, by Decades, 1911-62	250
M-1	Yearly Apprenticeship Transactions in the Metal Trades, 1911-62	251
M-2	New Registrations and Completions in and Ranks of Selected Occupations in the Metal Trades, by Decades, 1911-60	253
M-3	Percentage of Completions to New Registrations in Selected Occupations of the Metal Trades, by Decades, 1911-60	258
O-1	Number of Apprenticeable Occupations in Selected Miscellaneous Trades	259
O-2	Yearly Apprenticeship Transactions in the Miscellaneous Trades, 1911-63	260
O-3	Total Registrations and Completions in Selected Occupations of the Miscellaneous Trades, 1940-60	262
O-4	Percentage of Completions and Cancellations to New Registrations in All Miscellaneous Trades, by Decades, 1911-63	263

Appendix Table	Title	Page
0-5	Total Registrations and Completions in the Automotive Trades, 1911-62	263
0-6	Registrations and Completions in the Automotive Trades by Decades, 1911-60	264
0-7	Total Registrations and Completions in the Printing Trades, 1911-62	265
0-8	Registrations and Completions in the Printing Trades by Decades, 1911-60	266
0-9	Total Registrations and Completions in the Service Occupations, 1911-62	267
0-10	Total Registrations and Completions in the Food Industry Occupations, 1911-62	267
0-11	Total Registrations and Completions in the Metalworking Occupations, 1911-62	267
0-12	Total Registrations and Completions in the Clerical and Sales Occupations, 1911-62	268
0-13	Total Registrations and Completions in the Garment Industry Occupations, 1911-31	269
0-14	Total Registrations and Completions in the Railroad Industry Occupations, 1911-62	269
0-15	Registrations and Completions in the Machinist (Railroad) Occupation by Decades, 1911-62	270
0-16	Total Registrations and Completions in the Remaining Occupational Groups of the Miscellaneous Trades, 1911-62	270
0-17	Total Registrations and Completions in Selected Occupational Groups of the Miscellaneous Trades, 1911-62	271
S-1	The Costs of the Administration of Apprenticeship, 1935-63	272
V-1	Apprentices Enrolled in Wisconsin Vocational and Adult Education Schools, 1960-61	273
V-2	Vocational Schools According to Apprentice Enrollment, 1961-62	274
V-3	Apprentice Enrollment in Vocational Schools According to City Size, Recent Years	275
V-4	Total Number of Circuit Teachers Teaching Apprentices Only, 1943-56	276
V-5	Provision of the Costs of Circuit Instruction, 1947-48	277

APPENDIX TABLE A-1.

Yearly Apprenticeship Transactions in Wisconsin, 1911-63

Year	Total new indentures (1)	Change over previous period (2)	Total com-pletions (3)	% of (3) in (1) (4)	Total cancel-lations (5)	Change over previous year (6)	% of (5) in (1) (7)
1911							
1912	5		2	40%	2		40%
1913	15	10	7	47	8	6	53
1914	21	6	12	57	9	1	43
1915	188	167	80	43	103	94	55
1916	429	241	181	42	236	133	55
1917	515	86	221	43	277	41	54
1918	332	-183	162	49	157	-120	47
1919	350	18	145	41	186	29	53
1920	563	213	265	47	259	73	46
1911-20	2,418		1,075		1,237		
1921	421	-142	151	36%	225		53%
1922	662	241	307	46	303	78	46
1923	798	136	384	48	357	54	45
1924	778	-20	345	44	372	15	48
1925	821	43	384	47	372	0	45
1926	794	-27	384	48	317	-55	40
1927	679	-115	235	35	226	-91	33
1928	656	-23	90	14	176	-50	27
1929	755	99	47	62	189	3	25
1930	376	-379	4	1	58	-131	15
1921-30	6,740	4,322	2,331	35	2,595	1,358	39

Appendix Table A-1 (continued)

Year	Total new indentures (1)	Change over previous period (2)	Total com-pletions (3)	% of (3) in (1) (4)	Total cancel-lations (5)	Change over previous year (6)	% of (5) in (1) (7)
1931	73	-303	33		13	-55	4%
1932	55	-18	356	647%	209	206	380
1933	46	-9	159	345	51	-158	110
1934	101	55	188	186	52	1	51
1935	440	339	232	53	54	2	12
1936	945	505	143	15	118	64	12
1937	1,055	110	145	14	223	105	21
1938	576	-478	256	44	253	30	44
1939	790	214	344	44	160	-93	20
1940	1,099	309	444	40	309	149	28
1931-40	4,390	-2,350	2,300	52	1,442	-1,163	33
1941	1,525	426	594	39%	312	3	20
1942	1,438	-87	587	41	558	246	39
1943	1,132	-306	535	47	420	-138	37
1944	993	-139	337	34	479	59	48
1945	1,775	782	174	10	616	137	35
1946	8,702	6,927	212	2	1,222	606	14
1947	4,909	-3,793	792	16	2,879	1,657	59
1948	3,847	-1,062	1,134	29	3,958	1,079	103
1949	2,606	-1,241	2,429	93	2,437	-1,521	94
1950	2,627	21	2,909	111	1,970	-467	87
1941-50	29,554	25,164	9,703	33	14,851	13,419	50

Appendix Table A-1 (continued)

Year	Total new indentures (1)	Change over previous period (2)	Total com-pletions (3)	% of (3) in (1) (4)	Total cancel-lations (5)	Change over previous year (6)	% of (5) in (1) (7)
1951	2,560	-67	2,040	80%	1,509	-461	59%
1952	1,967	-593	1,457	74	960	-549	49
1953	1,946	-375	1,233	53	998	38	43
1954	1,946	-375	1,162	60	797	-201	41
1955	2,422	476	1,215	50	856	59	35
1956	2,664	242	1,276	48	966	110	36
1957	1,917	-747	1,221	64	865	-101	45
1958	1,335	-582	1,227	92	748	-117	56
1959	1,593	258	1,298	81	767	19	48
1960	1,602	9	1,399	87	657	-110	41
1951-60	20,327	-9,227	13,538	67	9,123	-5,728	45
1961	1,380	-222	1,238	90%	400	-257	29
1962	1,376	-4	882	65	385	-15	28
1963	1,485	109	1,016	68	422	37	28
1961-63	4,241		3,136		1,207		

Source: Compiled from the administrative files of the Apprenticeship Division, *op. cit.* Completions and cancellations do not equal new indentures for each year because the duration of the training period is more than one year, and completions and cancellations may include apprentices indentured in previous years. Cancellations means those who were last in the training program during the year specified.

APPENDIX TABLE A-2

Yearly New Registrations by Trades, 1940-62

	New Registrations						
Year	Total (1)	Metal trades (2)	% of (2) in (1) (3)	Bldg. trades (4)	% of (4) in (1) (5)	Misc. trades (6)	% of (6) in (1) (7)
1940	1,099	540	49%	305	28%	254	23%
1941	1,525	929	61	246	16	350	23
1942	1,438	1,101	77	95	7	242	17
1943	1,132	712	63	42	4	378	33
1944	993	398	40	75	8	520	52
1945	1,775	511	29	345	19	919	52
1946	8,702	1,434	17	2,567	30	4,701	54
1947	4,909	818	17	1,373	28	2,718	55
1948	3,847	664	17	1,286	33	1,897	49
1949	2,606	371	14	771	30	1,464	56
1950	2,627	485	19	984	38	1,158	44
1951	2,560	703	28	978	38	879	34
1952	1,967	669	34	620	32	678	35
1953	2,321	678	29	672	29	971	42
1954	1,946	377	19	658	34	911	47
1955	2,422	572	24	934	39	916	38
1956	2,664	766	29	986	37	912	34
1957	1,917	554	29	624	33	739	39
1958	1,335	190	14	525	39	620	46
1959	1,593	440	28	519	33	634	40
1960	1,602	402	25	577	36	623	39
1961	1,380	254	18	598	43	525	38
1962	1,376	353	26	503	37	520	38

Source: Same as Appendix Table A-1. Percentage figures are rounded.

APPENDIX TABLE A-3

Yearly Completions by Trades, 1940-62

	Completions						
Year	Total (1)	Metal trades (2)	% of (2) in (1) (3)	Bldg. trades (4)	% of (4) in (1) (5)	Misc. trades (6)	% of (6) in (1) (7)
1940	444	303	68%	93	20%	48	11%
1941	594	389	65	117	20	88	15
1942	587	362	62	101	17	124	21
1943	535	442	83	30	6	63	12
1944	337	291	86	15	5	31	9
1945	174	93	53	19	11	62	36

Appendix Table A-3 (continued)

	Completions						
Year	Total (1)	Metal trades (2)	% of (2) in (1) (3)	Bldg. trades (4)	% of (4) in (1) (5)	Misc. trades (6)	% of (6) in (1) (7)
1946	212	113	53	41	19	58	27
1947	792	328	41	251	32	273	35
1948	1,134	476	42	248	22	410	36
1949	2,429	800	33	556	23	1,073	44
1950	2,909	644	22	1,131	39	1,134	39
1951	2,040	425	31	962	47	653	32
1952	1,457	299	21	620	43	538	37
1953	1,233	297	24	531	43	405	33
1954	1,162	330	28	479	41	353	30
1955	1,215	405	33	500	41	310	26
1956	1,276	197	15	276	22	803	63
1957	1,221	380	31	488	40	353	29
1958	1,227	298	24	532	43	397	32
1959	1,298	402	31	548	42	348	27
1960	1,399	425	30	556	40	418	30
1961	1,238	343	28	540	44	355	29
1962	1,151	522		305		266	

Source: Same as Appendix Table A-1. Percentage figures are rounded.

APPENDIX TABLE A-4

Yearly Cancellations by Trades, 1940-62

	Cancellations						
Year	Total (1)	Metal trades (2)	% of (2) in (1) (3)	Bldg. trades (4)	% of (4) in (1) (5)	Misc. trades (6)	% of (6) in (1) (7)
1940	309	52	17%	162	52%	95	31%
1941	312	79	25	72	23	161	52
1942	558	302	54	77	14	179	32
1943	420	256	61	32	8	132	32
1944	479	178	37	13	3	288	60
1945	616	266	43	53	9	297	48
1946	1,222	289	24	188	15	745	61
1947	2,879	593	21	731	25	1,555	54
1948	3,958	740	19	941	24	2,277	58
1949	2,437	308	13	545	22	1,584	65
1950	1,970	360	19	437	22	1,173	60
1951	1,509	209	14	464	31	836	55
1952	960	187	20	234	24	539	56
1953	998	230	23	234	24	534	54
1954	797	131	16	197	25	469	59
1955	856	151	18	214	25	491	57
1956	966	445	46	487	50	34	4
1957	865	156	18	251	29	458	53
1958	748	103	14	276	37	369	49
1959	767	198	26	187	24	382	50
1960	657	165	25	166	25	381	
1961	400	55	14	108	27	237	59
1962	396	48		129		219	

Source: Same as Appendix Table A-1.

APPENDIX TABLE A-5.

Total Apprenticeship Transactions by Trades, 1911-63

	New registrations	%	Completions	% of (3) in (1)
Building trades	19,669	29	10,268	52
Metal trades	19,598	28.9	10,806	55
Miscellaneous trades	28,403	42.0	10,966	39
All trades	67,670	100.	32,040	47

Source: Same as Appendix Table A-1.

APPENDIX TABLE A-6.

Annual Average of New Registrations, Completions, and Cancellations, by Decades, 1911-60

Period	Total new	Annual average	Total completed	Annual average	Total cancellations	Annual average
1911-20	2,418	242	1,075	108	1,237	124
1921-30	6,470	647	2,331	233	2,595	260
1931-40	4,390	440	2,267	227	1,432	143
1941-50	29,554	2,955	9,703	970	14,851	1,485
1951-60	20,327	2,032	13,528	1,352	9,123	912

Source: Same as Appendix Table A-1.

APPENDIX TABLE A-7

Employment and Supply of Skilled Workers through Apprenticeship in Wisconsin, 1940 and 1960

Occupation	Employed skilled workers in 1960 (1)	Employed skilled workers in 1940 (2)	Change between 1940 and 1960 (3)	Replacement rate in 20 years (%) (4)	Replacement number(a) (5)	Total, 3 + 5 (6)	Apprentice completions, 1941-60 (7)	% of (7) in (6) (8)
Bakers	2,212	2,742	- 530	44	1,210	1,210[b]	144	12
Bricklayers	4,269	2,154	2,115	32	690	2,805	905	32
Cabinetmakers	1,745	1,260	485	44	550	1,035	379	37
Carpenters	17,094	11,055	6,039	40	4,420	10,459	1,932	18
Compositors	3,938	3,529	409	48	1,690	2,099	376	18
Electricians	6,821	4,015	2,806	36	1,450	4,256	1,078	25
Linotype operators	5,677	2,372	3,305	28	660	3,965	166	4
Lithographers	892	514	378	36	190	568		
Machinists	15,790	17,304	-1,514	44	7,610	7,610[b]	2,707	36
Meatcutters		3,574		36	1,290		423	
Mechanic(auto)	16,298	7,928	8,370	28	2,220	10,590	856	8
Molders	2,476	3,751	-1,275	40	1,500	1,500[b]	328	22
Painters	6,450	6,647	- 197	40	2,660	2,660[b]	668	25
Patternmakers	1,645	1,350	295	48	650	945	428	45
Plasterers	5,885	3,320	2,565	40	1,330	3,895	1,516	39
Printing Pressmen	1,767	774	993	36	280	1,273	260	20
Sheet Metal Workers	3,410	2,685	725	36	970	1,695	749	44

Appendix Table A-7 (Continued)

Occupation	Employed skilled workers in 1960 (1)	Employed skilled workers in 1940 (2)	Change between 1940 and 1960 (3)	Replacement rate in 20 years (%) (4)	Replacement number (a) (5)	Total, 3 + 5 (6)	Apprentice completions, 1941-60 (7)	% of (7) in (6) (8)
Structural iron workers	1,234	529	705	36	190	895		
Tool and die makers	5,790	3,020	2,770	44	1,330	4,100	1,120	27
Welders							198	

a. Figures are rounded

b. Replacement only

APPENDIX TABLE A-8.

Wisconsin Employers Participating in the Apprenticeship Program in Selected Years

Years	Total	Bldg. trades	Metal trades	Others
1919	112	12	100	-
1932	50	-	50	-
1940	800	200	200	400
1950	5,000	1,700	800	2,500
1960	2,400	1,200	250	950
1963	2,600	1,300	300	1,000

Source: Figures for 1919 are from the administrative files of the Apprenticeship Division: figures for 1932, 1940, 1950, 1960, and 1963 were supplied by the director of the Apprenticeship Division.

APPENDIX TABLE B-1.

Yearly Apprenticeship Transactions in the Building Trades, 1911-62

Year	New registrations	Completions	Cancellations
1911			
1912	1		
1913	1		1
1914	7	3	4
1915	9	4	4
1916	13	4	8
1917	20	8	6
1918	6	2	3
1919	19	12	5
1920	36	23	9
1921	68	37	23
1922	129	66	41
1923	144	75	47
1924	153	80	58
1925	187	90	66
1926	143	55	37
1927	140	23	35
1928	134	3	24
1929	134	--	33
1930	56	--	7
1931	20	31	11
1932	35	140	69
1933	7	18	15
1934	40	28	4
1935	143	29	8
1936	257	44	47
1937	339	43	69
1938	348	116	150
1939	305	69	43
1940	305	93	162
1941	246	117	72
1942	95	101	77
1943	42	30	32
1944	75	15	13
1945	345	19	53
1946	2,567	41	188
1947	1,373	251	731
1948	1,286	248	941
1949	771	556	545
1950	984	1,131	437
1951	978	962	464
1952	620	620	234
1953	672	531	234
1954	658	479	197
1955	934	500	214
1956	986	276	487

Appendix Table B-1 (continued).

Year	New registrations	Completions	Cancellations
1957	624	488	251
1958	525	52	276
1959	519	548	187
1960	577	556	166
1961	598	540	108
1962	503	305	129

Source: Compiled from unpublished charts of the Apprenticeship Division. Some contracts are omitted from the 1912-31 data, since their disposition is unknown.

APPENDIX TABLE B-2.

New Registrations and Completions in and Ranks of Selected Occupations in the Building Trades by Decades, 1911-1962 (a)

Period	New	Change	Rank	Completions	Change	Rank
Bricklayers and masons (63%)						
1911-20	58		1	27		1
1921-30	244	186	2	107	80	2
1931-40	88	-150	6	52	-52	3
1941-50	740	652	5	232	180	5
1951-60	605	-135	6	673	441	3
1961-62	80	-525	6	44	-629	6
Total	1,815			1,135		
Cabinet makers (50%)						
1911-20	2		5	1		5
1921-30	65	63	5	23	22	4
1931-40	23	-42	7	18	-5	7
1941-50	521	498	7	132	114	7
1951-60	238	-283	8	247	115	8
1961-62	12		7	13	-234	7
Total	861			434		
Carpenters (53%)						
1911-20	2		5	0		
1921-30	88	86	4	19	19	5
1931-40	239	151	3	45	26	5
1941-50	2,102	1,863	1	717	672	1
1951-60	1,437	-665	1	1,213	498	1
1961-62	155	-1,282	3	131	1,084	3
Total	4,023			2,127		
Electricians (miscellaneous) (44%)						
1911-20						
1921-30						
1931-40						
1941-50	414		8	79		9
1951-60	235	-179	9	142	63	10
1961-62						
Total	649			221		

Appendix Table B-2 (continued).

Period	New	Change	Rank	Completions	Change	Rank
Electricians (construction) (54%)						
1911-20	3		4	3		4
1921-30	31	28	7	7	4	8
1931-40	90	59	5	39	32	6
1941-50	795	705	3	243	204	4
1951-60	758	-37	4	568	325	4
1961-62	203	-555	2	155	-413	2
Total	1,880			1,015		
Painters and decorators (33%)						
1911-20	2		5	1		5
1921-30	101	99	3	39	38	3
1931-40	781	680	1	88	49	2
1941-50	756	-25	4	319	231	3
1951-60	774	18	3	349	30	6
1961-62	107	-667	4	46	-303	5
Total	2,521			842		
Plasterers (58%)						
1911-20	12		3	5		3
1921-30	38	26	6	15	10	6
1931-40	23	-15	7	7	-8	9
1941-50	135	112	10	25	18	10
1951-60	159	24	10	152	127	9
1961-62	9	-150	8	13	-139	7
Total	376			217		
Plumbers (58%)						
1911-20	35		2	19		2
1921-30	736	701	1	222	203	1
1931-40	433	-303	2	318	96	1
1941-50	1,185	752	2	360	42	2
1951-60	1,322	137	2	1,156	796	2
1961-62	280	-1,042	1	224	-932	1
Total	3,991			2,299		

Appendix Table B-2 (continued).

Period	New	Change	Rank	Com-pletions	Change	Rank
Sheetmetal workers (56%)						
1911-20						
1921-30	7		10	3		9
1931-40	113	106	4	49	46	4
1941-50	619	506	6	191	142	6
1951-60	731	112	5	516	325	5
1961-62	97	-634	5	114	-402	4
Total	1,567			873		
Steamfitters (55%)						
1911-20						
1921-30						
1931-40	4		8	1		11
1941-50	302	298	9	80	79	8
1951-60	415	113	7	293	213	7
1961-62						
Total	721			374		
Stone cutters (25%)						
1911-20						
1921-30	11		9			
1931-40	1	-10	10	3	3	10
1941-50						
1951-60						
1961-62						
Total	12			3		
Tile setters (81%)						
1911-20						
1921-30	24		8	14		7
1931-40	3	21	9	8	6	8
1941-50						
1951-60						
1961-62						
Total	27			22		

Appendix Table B-2 (continued).

Period	New	Change	Rank	Completions	Change	Rank
Ironworkers (74%)						
1911-20						
1921-30	6		11	3		9
1931-40						
1941-50						
1951-60	20	14	11	19	16	11
1961-62	12	-10	7	6	-7	8
Total	38			28		
Miscellaneous (57%)						
1911-20						
1921-30	8			3		
1931-40						
1941-50	323	315		116	113	
1951-60	408	85		305	189	
1961-62	57	351		31	-274	
Total	796			455		

a. Figure in parentheses after occupation denotes the over-all completion rate for the period 1911-62 for that occupation.

Source: See Appendix Table A-1.

APPENDIX TABLE B-3

Total New Registrations and Completions in the Building Trades, 1940-62

Occupations	New registrations (1)	Completions (2)	% of (2) in (1) (3)
Bricklayers and masons	1,358	931	68.55
Cabinetmakers	765	391	49.80
Carpenters	3,613	1,939	53.66
Electricians (misc.)	649	221	34.05
Electricians (constr.)	1,519	803	52.86
Painters and decorators	1,650	689	41.75
Plasterers	299	178	59.53
Plumbers	2,515	1,560	62.02
Iron Workers	20	19	95.00
Sheet metal workers	1,374	713	51.89
Steamfitters	718	373	51.94
Miscellaneous	731	421	57.59

Source: See Appendix Table A-1.

APPENDIX TABLE B-4

Percentage of Completions to New Registrations in Selected Occupations of the Building Trades, by Decades, 1911-62

Occupation	1911-20	1921-30	1931-40	1941-50	1951-60	1961-62
Bricklayers and masons	47	44	59	31	111	55
Cabinetmakers	50	35	78	25	104	108
Carpenters		22	19	34	85	85
Electricians (constr.)	100	23	43	31	75	76
Electricians (misc.)				19	60	
Iron workers		50			95	50
Marble masons		50				
Painters and decorators	50	39	11	42	45	43
Plasterers	42	39	30	19	96	144
Plumbers	54	30	73	30	87	80
Sheet metal workers		43	43	31	71	118
Steamfitters			25	26	71	
Stone cutters			300			
Tile setters		58	266			
Miscellaneous		38		36	75	54
Total	49	33	35	32	79	77

Source: See Appendix Table A-1. Rates may exceed 100 percent, because the figures compared are the new registrations and the completions in a particular decade, not the number of new registrations which ended in completions.

APPENDIX TABLE M-1

Yearly Apprenticeship Transactions in the Metal Trades, 1911-62

Year	New registrations	Completions	Cancellations
1912	1	1	
1913	7	4	3
1914	7	5	2
1915	142	53	86
1916	337	132	199
1917	364	148	210
1918	220	105	110
1919	199	87	110
1920	296	153	131
1921	115	53	55
1922	330	139	174
1923	379	188	175
1924	345	149	184
1925	435	200	221
1926	433	215	203
1927	380	166	142
1928	387	63	113
1929	498	40	125
1930	240	4	33
1931	39	2	2
1932	6	109	68
1933	24	113	28
1934	26	128	36
1935	210	170	41
1936	487	82	40
1937	517	63	91
1938	101	108	25
1939	251	215	36
1940	540	303	52
1941	929	389	79
1942	1101	362	302
1943	712	442	256
1944	398	291	178
1945	511	93	266
1946	1434	113	289
1947	818	328	593
1948	664	476	740
1949	371	800	308
1950	485	644	360
1951	703	425	209
1952	669	299	187

Appendix Table M-1 (Continued)

Year	New registrations	Completions	Cancellations
1953	678	297	230
1954	377	330	131
1955	572	405	151
1956	766	197	445
1957	554	380	156
1958	190	298	103
1959	440	402	198
1960	402	425	165
1961	254	343	55
1962	353	522	48

Source: See Appendix Table A-1.

APPENDIX TABLE M-2

New Registrations and Completions in and Ranks of Selected Occupations in the Metal Trades, by Decades, 1911-60

Period	New registrations	Rank	Completions	Rank
Blacksmiths				
1911-20	5	9	2	8
1921-30	25	11	6	9
1931-40	19	10	11	9
1941-50	93	11	19	14
1951-60	35	15	32	13
Total	177	11	71	12
Boilermakers				
1911-20	10	7	3	7
1921-30	27	9	5	10
1931-40	14	13	10	10
1941-50	39	15	11	17
1951-60	14	17	10	18
Total	105	14	39	15
Coremaker				
1911-20	1	10	0	
1921-30	25	11	4	11
1931-40	25	9	8	11
1941-50	56	14	21	13
1951-60	28	16	19	16
Total	136	12	54	13
Die Sinker				
1911-20				
1921-30	7	12	1	12
1931-40	15	12	4	12
1941-50	31	17	18	15
1951-60	44	14	22	15
Total	99	15	54	13

Appendix Table M-2 (Continued)

Period	New registrations	Rank	Completions	Rank
Diesel Engine				
1911-20				
1921-30				
1931-40				
1941-50	14	18	8	18
1951-60	12	18	13	17
Total	26	17	21	16
Draftsman				
1911-20	41	4	30	4
1921-30	316	4	184	2
1931-40	184	4	164	3
1941-50	786	3	410	3
1951-60	670	3	486	3
Total	2,056	3	1,356	2
Electrician				
1911-20	75	3	39	3
1921-30	84	6	34	5
1931-40	16	11	10	10
1941-50	298	7	125	9
1951-60	404	5	280	5
Total	932	6	559	6
Machine Erector				
1911-20				
1921-30				
1931-40				
1941-50	60	13	17	16
1951-60	56	13	31	14
Total	116	13	48	14

Period	New Registrations	Rank	Completions	Rank
Machinist				
1911-20	1,015	1	414	1
1921-30	1,583	1	488	1
1931-40	1,113	1	572	1
1941-50	2,882	1	1,666	1
1951-60	1,552	1	1,041	1
Total	8,307	1	4,326	1
Molder				
1911-20	23	5	5	6
1921-30	467	2	117	3
1931-40	266	2	140	4
1941-50	434	4	194	5
1951-60	203	7	134	7
Total	1,417	4	605	5
Patternmaker - Metal				
1911-20	20	6	9	5
1921-30	29	8	9	8
1931-40	26	8	17	7
1941-50	90	12	46	10
1951-60	86	10	53	10
Total	253	10	137	10
Patternmaker - Wood				
1911-20				
1921-30				
1931-40	99	6	115	5
1941-50	315	6	171	7
1951-60	247	6	158	6
Total	669	7	467	7

Appendix Table M-2 (Continued)

Period	New Registrations	Rank	Completions	Rank
Sheet metal Worker				
1911-20	8	8	1	9
1921-30	120	5	33	6
1931-40	112	5	35	6
1941-50	137	10	42	11
1951-60	111	9	75	9
Total	502	8	197	9
Structural Layout Man				
1911-20				
1921-30	5	13	1	12
1931-40				
1941-50				
1951-60				
Total	5	18	1	18
Tool and Diemaker				
1911-20				
1921-30				
1931-40				
1941-50	1,085	2	469	2
1951-60	956	2	651	2
Total	2,141	2	1,243	3
Tool Designer				
1911-20				
1921-30				
1931-40				
1941-50	33	16	24	12
1951-60	65	12	51	11
Total	105	14	81	11

Appendix Table M-2 (Continued)

Period	New Registrations	Rank	Completions	Rank
Toolmaker				
1911-20	136	2	65	2
1921-30	346	3	115	4
1931-40	221	3	199	2
1941-50	205	9	231	4
1951-60	136	8	119	8
Total	1,048	5	733	4
Welder				
1911-20				
1921-30	47	7	20	7
1931-40	41	7	13	8
1941-50	265	8	153	8
1951-60	69	11	45	12
Total	427	9	238	8
Woodworker				
1911-20				
1921-30	26	10	NA	
1931-40	9	14	13	8
1941-50	13	19	4	19
1951-60				
Total	48	16	17	17
Miscellaneous				
1911-20	2		1	9
1921-30	42		20	7
1931-40				
1941-50	373	5	184	6
1951-60	493	4	301	4
Total	1,027		559	

APPENDIX TABLE M-3

Percentage of Completions to New Registrations in Selected Occupations of the Metal Trades, by Decades, 1911-60

Occupation	1911-20	1921-30	1931-40	1941-50	1951-60
Blacksmith	40	24	58	20	91
Boilermaker	33	19	71	28	71
Coremaker		16	32	37	68
Die Sinker		14	27	58	50
Draftsman	73	58	89	52	73
Electrician (Ind.)	52	40	63	42	69
Machine Erector				28	55
Machinist	41	30	51	58	67
Molder	22	25	53	45	66
Patternmaker (Metal)	45	31	65	51	62
Patternmaker (Wood)			116	54	64
Sheet metal worker	13	28	31	31	68
Structural Layout man		20			
Tool and Diemaker				43	68
Tool Designer				73	78
Toolmaker	40	33	90	113	88
Welder		43	31	58	65
Woodworker			144	31	
Miscellaneous	50	48		49	61
Total	43	33	61	52	68

Source: See Appendix Table A-1. Rates may exceed 100 percent, because the figures compared are the new registrations and the completions in a particular decade, not the number of new registrations which ended in completions.

APPENDIX TABLE O-1

Number of Apprenticeable Occupations in Selected Miscellaneous Trades

Trade	No.
Automotive trades	3
Clerical and sales	4
Food industry	3
Garment industry (1915-31)	10[a]
Lumber industry	2
Metal working occupations	3
Printing trades	6[b]
Professional occupations	2
Railroad industry	10[a]
Semi-professional occupations	2
Service occupations	4
Leather goods industry	2
Utilities occupations	2
Others	8[c]

A. Omitted since 1940.

b. Excludes printing trades miscellaneous.

c. Includes shipbuilders and woodworkers.

Source: See Appendix Table A-1.

APPENDIX TABLE O-2

Yearly Apprenticeship Transactions in the Miscellaneous Trades, 1911-63

Year	New registrations	Completions	Cancellations
1911	0	0	0
1912	3	1	2
1913	7	3	4
1914	7	4	3
1915	37	23	13
1916	79	45	29
1917	131	65	61
1918	106	55	44
1919	132	46	71
1920	231	89	119
1911-20	733	331	346
1921	238	61	147
1922	203	102	88
1923	275	121	132
1924	280	116	130
1925	199	94	85
1926	218	114	77
1927	159	46	49
1928	135	24	39
1929	123	7	31
1930	80	0	18
1921-30	1,910	685	796
1931	14	0	0
1932	14	103	72
1933	15	28	8
1934	35	32	12
1935	87	33	5
1936	207	17	31
1937	199	39	63
1938	127	32	78
1939	234	60	81
1940	254	48	95
1931-40	1,186	392	445
1941	350	88	161
1942	242	124	179
1943	378	63	132
1944	520	31	288
1945	919	62	297

Appendix Table O-2 (Continued)

Year	New registrations	Completions	Cancellations
1946	4,701	58	745
1947	2,718	273	1,555
1948	1,897	410	2,277
1949	1,464	1,073	1,584
1950	1,158	1,134	1,173
1941-50	14,347	3,316	8,391
1951	879	653	836
1952	678	538	539
1953	971	405	534
1954	911	353	469
1955	916	310	491
1956	912	802	34
1957	739	353	458
1958	620	397	369
1959	634	348	382
1960	623	418	381
1951-60	7,883	4,578	4,493
1961	525	355	237
1962	520	266	219
1963	470	326	210
1961-63	1,515	947	666

Source: Compiled from unpublished charts of the Apprenticeship Division. Some contracts are omitted from the 1912-31 data, since their disposition is unknown.

APPENDIX TABLE O-3

Total New Registrations and Completions in Selected Occupations of the Miscellaneous Trades, 1940-60

Occupation[a]	New registrations	Completions	% of (2) in (1)	Rank[b]
Auto body mechanic (1949-60)	199	133	66.83	2
Auto trades misc. (1949-60)	437	374	85.58	1
Auto mechanic (1940-45, 1948-60)	1,560	859	55.06	3
Bakers	533	147	27.57	18
Carmen	104	52	50.00	8
Cosmetologists	4,592	968	21.08	19
Dairy trades	480	246	51.25	6
Jewellers	46	22	47.82	10
Linemen (1949-60)	98	166		
Meat cutters	1,194	423	35.42	15
Mechanical dentists	127	47	37.00	14
Pressmen	495	260	52.52	4
Printer compositors	834	378	45.32	11
Printer weekly news (1949-60)	221	110	49.77	9
Shoemakers	99	38	38.38	13
Watchmakers	761	391	51.37	5
Business misc. (1946-60)	454	71	15.63	20
General misc. (1943-60)	1,965	629	32.01	17
Graphic arts misc. (1943-60)	1,066	542	50.84	7
Service trades misc. (1946-60)	460	184	40.00	12
Shipbuilding misc. (1943-60)	35	4	11.44	21

a. Dates in parentheses indicate the period during which the occupations were reported in the Apprenticeship Division records, if different from 1940-60.

b. Rank refers to completion rates.

Source: See Appendix Table A-1.

APPENDIX TABLE O-4

Percentage of Completions and Cancellations to New Registrations in All Miscellaneous Trades, by Decades, 1911-63

	Completions	Cancellations
1911-20	45.2	47.2
1921-30	35.9	41.7
1931-40	33.1	37.5
1941-50	23.1	58.5
1951-60	58.1	57.0
1961-63	62.5	44.0
Total	37.2	54.9

APPENDIX TABLE O-5

Total Registrations and Completions in the Automotive Trades, 1911-62

	Registrations (1)	Completions (2)	% of (2) to (1) (3)
Auto body builders (1961-62)	204	139	68
Auto electricians (1921-29)	3	1	33
Auto mechanics (1918-62)	1,630	917	56
Auto painters (1921-22)	3	0	
Auto trimmers (1921-26)	4	2	50
Auto industry misc. (1925-49, 1962)	441	377	85
Garage mechanics (1925-30)	16	4	25
Motorcycle repairmen (1918-24)	2	0	
All	2,303	1,440	63

Source: See Appendix Table A-1.

APPENDIX TABLE 0-6.

Registrations and Completions in the Automotive Trades by Decades

	1911-1920			1921-1930			1931-1940			1941-1950			1951-1960		
	Registrations	Completions	%	Registrations	Completions	%	Registrations	Completions	%	Registrations	Completions	%	Registrations	Completions	%
Auto body builder				3	1	33				70	67	96	129	66	55
Auto mechanic	1			39	15	38	8	10	125	821	453	55	737	403	51
Auto electrician				3	1	33									
Auto painter				3											
Auto trimmer				4	2	50									
Auto industry miscellaneous				4	3	75				139	193	139	298	181	61
Motorcycle repairman	1			1											
Garage mechanic				16	4	25									
Total	2			73	26		8	10	125	1,030	713	69	1,164	650	56

Source: See Appendix Table A-1.

APPENDIX TABLE O-7.

Total Registrations and Completions in the Printing Trades, 1911-62

	Registrations (1)	Completions (2)	% of (2) in (1) (3)
Copper-zinc etching (1911-26)	4	4	100
Engravers (1916-29)	19	6	32
Lithographers (1915)	75	28	37
Paper rulers (1918)	1		
Photo engravers (a) (1917)	41	16	39
Pressmen (1918-62)	522	282	54
Printer compositors (1912-62)	1,004	483	48
Printer weekly news (1949-62)	221	110	50
Printing trades misc. (1919-28)	15	6	40
Graphic arts misc. (1943-62)	1,106	597	54
All	3,008	1,532	51

a. Includes photographers.

Source: See Appendix Table A-1.

APPENDIX TABLE 0-8.

Registrations and Completions in the Printing Trades by Decades

	1911-1920			1921-1930			1931-1940			1941-1950			1951-1960		
	Regis-tra-tions	Com-ple-tions	%	Regis-tra-tions	Com-ple-tions	%	Regis-tra-tions	Com-ple-tions	%	Regis-tra-tions	Com-ple-tions	%	Regis-tra-tions	Com-ple-tions	%
Copper-zinc etching	1	1		3	3										
Engravers	1	1		18	5										
Lithographers	13	4		34	15										
Paper rulers	1														
Photoengravers	7	5		34	11										
Pressmen	3	2		22	8		1			342	101		153	159	
Printer compositors	48	20		89	37		5	2		610	116		219	260	
Printer weekly news										50	20		171	90	
Printing trades misc.	2	1		13	5										
Graphic arts misc.										672	178		394	364	
Total	76	34	45	213	84	39	6	2	33	1,674	415	25	937	873	93

Source: See Appendix Table A-1.

APPENDIX TABLE O-9.

Total Registrations and Completions in the Service Occupations, 1911-62

	Registrations (1)	Completions (2)	% of (2) in (1) (3)
Barbers (1915-62)	4,220	1,436	34
Butchers (1923-31)	51	15	29
Cosmetologists (1935-62)	5,005	1,114	22
Meat cutters (1920-62)	1,296	490	38
All	11,038	3,254	30

Source: See Appendix Table A-1.

APPENDIX TABLE O-10.

Total Registrations and Completions in the Food Industry Occupations, 1911-62

	Registrations (1)	Completions (2)	% of (2) in (1) (3)
Bakers (1918-61)	655	199	30
Candymakers (1923-28)	3	1	33
Dairy trades (1946-62)	480	247	51
All	1,138	447	39

Source: See Appendix Table A-1.

APPENDIX TABLE O-11.

Total Registrations and Completions in the Metalworking Occupations, 1911-62

	Registrations (1)	Completions (2)	% of (2) in (1) (3)
Jewelers (1920-62)	90	42	47
Locksmiths (1921-23)	3	3	100
Watchmakers. (1919-62)	849	422	50

Appendix Table 0-11 (continued).

	Registrations (1)	Completions (2)	% of (2) in (1) (3)
All	942	467	50

Source: See Appendix Table A-1.

APPENDIX TABLE 0-12.

Total Registrations and Completions in the Clerical and Sales Occupations, 1911-62

	Registrations (1)	Completions (2)	% of (2) in (1) (3)
Bankers and bank clerks (1923-26)	4	3	75
Bookkeepers (1922-26)	12	6	50
Salesmen, etc. (1922-27)	42	19	45
Dental technicians (1917-62)	144	53	36
Miscellaneous (business) (1946-62)	455	72	16
All	657	153	23

Source: See Appendix Table A-1.

APPENDIX TABLE O-13.

Total Registrations and Completions in the Garment Industry Occupations, 1911-31

	Registrations (1)	Completions (2)	% of (2) in (1) (3)
Dressmakers (1919-27)	4	0	
Furriers (1922-27)	3	0	
Glove industry (1923-29)	36	25	69
Knitting and looping machine adjusters (1918-30)	63	33	52
Lining makers (1923-24)	22	7	32
Milliners (1919-30)	23	5	22
Tailors (1915-31)	7	5	71
Vestmakers (1927-27)	3	2	66
Weavers (1921-21)	3	1	33
Garment industry misc. (1922-25)	6	4	66
All	170	82	48

Source: See Appendix Table A-1.

APPENDIX TABLE O-14.

Total Registrations and Completions in the Railroad Industry Occupations, 1911-62

	Registrations (1)	Completions (2)	% of (2) in (1) (3)
Blacksmiths (1916-29)	28	14	50
Boilermakers (1916-29)	66	23	35
Car carpenters (1925-31)	17	3	18
Carmen (1919-27)	338	68	20
Car repairers (1920-31)	63	18	29
Electricians (1916-31)	40	20	50
Engineers (junior) (1921-29)	91	54	59
Machinists (RR) (1915-62)	847	572	68
Painters (1916-30)	23	5	22
Sheet metal workers (1917-30)	29	11	38
Miscellaneous (1919-29)	16	10	63
All	1,558	798	51

Source: See Appendix Table A-1.

APPENDIX TABLE O-15.

Registrations and Completions in the Machinist (Railroad) Occupation by Decades

Period	Registrations (1)	Completions (2)	% of (2) in (1) (3)
1911-20	274	164	60
1921-30	183	82	45
1931-40	65	64	98
1941-50	163	92	56
1951-60	160	154	96
1961-62	2	16	

Source: See Appendix Table A-1.

APPENDIX TABLE O-16.

Total Registrations and Completions in the Remaining Occupations in the Miscellaneous Trades

	Registrations (1)	Completions (2)	% of (2) in (1) (3)
Leather products occupations			
Shoecutters (1917-26)	63	17	
Shoemakers (1921-61)	157	56	
All	220	73	33
Lumber products occupations			
Spindle carvers (1927-28)	4	1	25
Upholsterers (1919-20)	27	10	37
All	31	11	36
Professional occupations			
Druggists (1932-34)	NA	2	
Pharmacists (1921-28)	33	15	45
All	33	17	52
Semi-professional occupations			
Commercial artists (1919-34)	22	8	36
Designers and illustrators (1915-25)	5	2	40
All	27	10	37

Appendix Table 0-16 (continued)

	Regis-trations (1)	Com-pletions (2)	% of (2) in (1) (3)
Utilities occupations			
Linemen (1949-)	257	184	72
Municipal utilities (1962-)	2		
All	259	184	71
Others			
Artificial limb and tracemakers (1920-21)	2	0	0
Cigar makers (1915-22)	5	0	0
Cooperative students (1918-52)	351	150	43
Grocers (1923-28)			
Sign painters (1922-30)	16	5	31
Shipbuilders (1916-61)	38	6	16
Wire weavers 91914-43)	36	30	83
Woodworkers (1922-)	36	13	36
All	615	208	34

Source: Compiled from the files of the Apprenticeship Division and the First Report of the Industrial Commission.

APPENDIX TABLE 0-17.

Total Registrations and Completions in Selected Occupational Groups in the Miscellaneous Trades

	Regis-trations (1)	Com-pletions (2)	% of (2) in (1) (3)
Clerical and sales	657	153	23
Food industry	1,138	447	39
Lumber industry	31	11	36
Metalworking	942	467	50
Professional	33	17	52
Semi-professional	27	10	37
Services	11,038	3,254	30
Leather products	220	73	33
Utilities	259	184	71
Others	615	208	34
All	14,960	4,824	32

Source: See Appendix Table A-1.

APPENDIX TABLE S-1.

The Costs of Administration of Apprenticeship, 1935-63

Year	Actual expenditures by the Apprenticeship Division (a)	Total no. of transactions by the Apprenticeship Divison(b)	Cost per transaction
1935-36	$ 6,993	726	$ 0.96
1936-37	7,268	1,206	0.60
1937-38	7,702	1,423	0.54
1938-39	7,141	1,085	0.66
1939-40	7,024	1,294	0.54
1940-41	7,782	1,852	0.42
1941-42	10,021	2,431	0.41
1942-43	11,881	2,583	0.46
1943-44	12,727	2,087	0.61
1944-45	12,965	1,809	0.72
1945-46	15,398	2,565	0.60
1946-47	16,055	10,136	0.16
1947-48	26,682	8,580	0.31
1948-49	29,524	8,939	0.33
1949-50	31,288	7,472	0.42
1950-51	35,666	7,506	0.48
1951-52	39,201	6,109	0.64
1952-53	39,844	4,384	0.91
1953-54	41,501	4,552	0.91
1954-55	42,856	3,905	1.10
1955-56	43,464	4,493	0.97
1956-57	45,597	4,906	0.93
1957-58	56,172	4,003	1.40
1958-59	56,172	3,310	1.70
1959-60	61,735	3,658	1.69
1960-61	74,319	3,658	2.03
1961-62	91,766	3,018	3.04
1962-63	92,918 (c)	2,643	3.52

a. Figures are rounded

b. Transactions, including contracts approved, completed, and cancelled, but excluding inspections made by field representatives (the data on which are not available), done in the calendar year; i.e., 1960-61 transactions are those carried out between January 1, 1960, and December 31, 1960.

c. Governor's request.

APPENDIX TABLE V-1.

Apprentices Enrolled in Wisconsin Vocational and Adult Education Schools, 1960-61

School	Apprentice enrollment
Antigo	15
Appleton	85
Ashland	8
Baraboo	0
Beaver Dam	33
Beloit	111
Brillion	0
Chippewa Falls	0
Cudahy	17
Eau Claire	140
Fond du Lac	72
Fort Atkinson	4
Green Bay	117
Hartford	0
Janesville	49
Kaukauna	46
Kenosha	145
Kimberly	23
La Crosse	97
Madison	355
Manitowoc	80
Marinette	21
Marshfield	22
Menasha	76
Menomonie	0
Merrill	0
Milwaukee	909
Monroe	0
Mt. Horeb	0
Neenah	50
New Holstein	0
New Lisbon	0
Niagara	0
Oconomowoc	0
Oconto	0
Oshkosh	71
Portage	0
Port Washington	0
Prairie du Chien	0
Racine	185
Reedsburg	0
Rhinelander	13
Rice Lake	27
Richland Center	0
Sheboygan	121
Shorewood	0
South Milwaukee	43
Sparta	0
Stevens Point	6
Stoughton	0
Sturgeon Bay	6
Superior	49
Tomahawk	0
Two Rivers	51
Watertown	19
Waukesha	94
Waupun	0
Wausau	76
Wauwautosa	0
West Allis	147
West Bend	38
Whitewater	0
Wisconsin Rapids	15

APPENDIX TABLE V-2.

Vocational Schools According to Apprentice Enrollments, 1960-62

Below 25		25 to 49		50 to 99		100 to 300		300 to 500		500 and above	
Kimberly	23	Janesville	49	LaCrosse	97	Racine	185	Madison	355	Milwaukee	909
Marshfield	22	Kaukauna	46	Waukesha	94	West Allis	147				
Waunakee	21	West Bend	38	Appleton	85	Kenosha	145				
Watertwon	19	Beaver Dam	33	Manitowoc	80	Eau Claire	140				
Cudahy	17	Rice Lake	27	Menasha	76	Sheboygan	121				
Antigo	15			Fond du Lac	72	Green Bay	117				
Rhinelander	13			Oshkosh	71	Beloit	111				
Ashland	8			Two Rivers	51						
Stevens Point	6			Neena	50						
Sturgeon Bay	6										
Fort Atkinson	4										
Total	154 (5%)		193 (6%)		676 (21%)		966 (30%)		355 (11%)		909 (28%)

Source: Compiled from apprentice enrollments in the Wisconsin Schools of Vocational and Adult Education, 1961-62, Wisconsin State Board of Vocational and Adult Education, Madison, Wisconsin.

APPENDIX TABLE V-3.

Apprentice Enrollment in Vocational Schools According to Size of City, Recent Years

	1957-58		1958-59		1959-60		1960-61	
	No.	%	No.	%	No.	%	No.	%
All schools	4,628	100	3,615	100	3,517	100	3,436	100
250,000 and above	1,478	32	1,047	29	963	27	909	26
100,000-249,999	295	6	283	8	305	9	355	10
50,000-99,999	842	18	645	18	607	18	594	18
25,000-49,999	1,304	28	1,107	31	1,059	30	1,045	30
10,000-24,999	553	12	426	12	469	13	407	12
2,500-9,999	156	3	107	3	114	3	126	4

APPENDIX TABLE V-4.

Total Number of Circuit Teachers Teaching Apprentices Only, 1943-56

School year	Semester	Number
1943-44	1st	NA
	2nd	14
1944-45	1st	16
	2nd	16
1945-46	1st	17
	2nd	19
1946-47	1st	21
	2nd	22
1947-48	1st	
	2nd	24
1948-49	1st	25
	2nd	25
1949-50	1st	23
	2nd	22
1950-51	1st	20
	2nd	20
1951-52	1st	18
	2nd	17
1952-53	1st	16
	2nd	NA
1953-54	1st	NA
	2nd	NA
1954-55	1st	16
	2nd	16
1955-56	1st	16
	2nd	17

Source: Compiled from the files of the Occupational Extension Coordinator, State Board for Vocational and Adult Education, Madison. Figures for 1925-42 are not available.

APPENDIX TABLE V-5.

Provisions of the Costs of Circuit Instruction, 1947-48

Schools	State Aid	Federal Aid	Local Aid
Antigo	39%	21%	40%
Appleton	16	26	58
Beaver Dam	39	41	20
Beloit	18	26	56
Chippewa Falls	39	41	20
Cudahy	39	41	20
Eau Claire	15	25	60
Fond du Lac	21	25	54
Fort Atkinson	39	41	20
Green Bay	10	25	65
Janesville	27	26	47
Kaukauna	39	20	41
Kenosha	13	26	62
Kimberly	39	41	20
La Crosse	16	24	60
Madison	6	25	69
Manitowoc	17	25	58
Marinette	39	20	41
Marshfield	39	41	20
Menasha	39	40	21
Merrill	39	41	20
Monroe	39	41	20
Neenah	39	20	41
Oshkosh	18	25	57
Racine	8	26	66
Rhinelander	39	41	20
Rice Lake	39	41	20
Sheboygan	15	25	60
South Milwaukee	39	41	20
Stevens Point	39	21	40
Stoughton	39	41	20
Sturgeon Bay	39	41	20
Superior	20	25	55
Two Rivers	39	41	20
Watertown	39	21	40
Waukesha	27	26	47
Wausau	19	25	56
West Allis	9	26	65
West Bend	39	21	40
Wisconsin Rapids	39	41	20

Source: Report of the Occupational Extension Coordinator, Wisconsin Schools of Vocational and Adult Education, June 1949, p. 18.

QUESTIONNAIRE--CURRENT APPRENTICES

1. Please indicate. Male______ Female______

2. Your birth date. Month______________ Year ______

3. Your present education. (Highest year completed)

Elementary School ____________________

High School ____________________

College ____________________

4. Your father's occupation. (The job he held the longest so far)___

____

____

5. Your apprenticeship occupation. ______________________________

____

____

6. Please list the three most important reasons that led you to become an apprentice, in order of their importance:

(1) ____

____

____

(2) ____

____

____

(3) ____

____

____

7. If you had a free hand in improving the apprenticeship program, what would you list as the three important improvements you would make. Please state them in order of their importance.

(1)____

____

____

(2) ____

____

____

(3) ____

____

____

8. Do you have any remarks regarding the apprenticeship program and your training?

____

____

____

____

____

____

QUESTIONNAIRE--APPRENTICESHIP DROP-OUTS

1. Please indicate. Male________ Female__________

2. Your birth date. Month________ Year __________

3. Your marital status
   - Married_____________
   - Single_____________
   - Other_____________

4. Date of your marriage: Month____________________ Year__________

5. Children: (Please indicate birth date--month and year of each child)

	Month	Year
(1)		
(2)		
(3)		
(4)		

I have no children______________________________

6. Your present education (Highest year completed):
   - Elementary School______________
   - High School ______________
   - College ______________

7. Your present occupation. (Please be specific, indicate what you do)

8. Your father's occupation. (What kind of work did your father do most of his life?)

9. Your present weekly earnings before deductions:

$________________

10. It would be helpful in improving the apprenticeship program if you would indicate the reason or reasons that made you decide to leave the apprenticeship program before you completed it.

____

____

____

____

____

____

QUESTIONNAIRE--EMPLOYERS

1. Name of the firm. ____________________

2. City where the firm is located. ____________________

3. Please indicate.

   Metal trades ____________________

   Building trades ____________________

   Miscellaneous ____________________

4. Total number of skilled workers employed in your firm: __________

5. Total number of apprentices currently training in your firm: _____

6. Please list the occupations of apprentices currently being trained in your firm:

   ____

   ____

   ____

   ____

   ____

7. Were you training apprentices in 1950: Yes: _______ No __________

7a. If yes, can you estimate the number of apprentices you were training in 1950?

   ____

8. Why are you training fewer or more apprentices, compared to 1950, as the case may be?

   ____

   ____

   ____

   ____

   ____

   ____

9. What in your opinion are the three most important reasons that prevent you from training more apprentices than you are currently training? Please list them in the order of their importance:

(1)____

(2)____

(3)____

10. Do you have any other remarks regarding apprentice training in the State of Wisconsin?

SELECTED BIBLIOGRAPHY

Articles

"The Apprenticeship Program: Today's Best Training Buy," Management Review (February 1953).

"Mechanization in the Building Industry," Carpenter (December 1959).

"Our Apprenticeship Set Up Is a Scandal," American Machinist (September 21, 1959).

"Trends in the Development of Apprenticeship Program," Monthly Labor Review (May 1955)

"Wanted: Two Million Apprentices," Management Review (October 1953).

H. A. Bland, "Apprenticeship--Can We Expect It to Supply the Need for Skilled Workers?" Journal of Industrial Relations (April 1961).

W. C. Christensen, "American Industry Needs More Skill and Management Development," Personnel Administrator (April 1958).

Margaret Croft, "Apprenticeship and the Bulge," Fabian Society Research Series 216 (London, 1960).

F. F. Foltman, "Apprenticeship and Skill Training: A Trial Balance," Monthly Labor Review (January 1964).

Edward E. Goshen, "The Coming Crisis in Apprenticeship Training," Mechanical Contractor (March 1963).

Charles Harding, "Contruction Drifts Toward Labor...," Engineering News Record (April 20, 1961).

Harvey I. Hyman, "The Craftsman: Today's Vanishing American," American Machinist (April 4, 1960).

J. S. McCauley, "Employment Status of Former Apprentices in Early 1954," Monthly Labor Review (July 1954).

A. W. Motley, "Recent Trends in the Test Selection of Apprentices," Monthly Labor Review (October 1953).

Harvey L. Oswald, "Apprenticeship in Wisconsin 1940," Federal Commission on Apprenticeship (Washington, D.C.).

J. Poulton, "Apprentice Programs Must Be Geared to Automation and Atomic Progress," Machinist Monthly Journal (July-August 1955).

Martha F. Riche, "Public Policies and Programs--An Assessment of Apprenticeship," Monthly Labor Review (February 1964).

S. Rottenberg, "The Irrelevance of Union Apprentice Journeymen Ratios," Journal of Business (July 1961).

R. C. Siciliano, "Through Apprenticeship to Better Skills," Employment Security Review (October 1954).

J. R. Stevenson, "The Growing Emphasis on Skill," Carpenter (December 1959).

Books

P. E. Bergevin, Industrial Apprenticeship (New York: McGraw-Hill, 1949).

Paul H. Douglas, American Apprenticeship and Industrial Education (New York: Columbia University Press, 1921).

G. Haferbecker, Wisconsin Labor Laws (Madison: University of Wisconsin Press, 1961).

Harry Kursh, Apprenticeship in America (New York: W. W. Norton, 1958).

K. Leipman, Apprenticeship (New York: Humanities Press, 1960).

W. McLaine, New Views on Apprenticeship (New York: Staples Press, 1948).

J. M. Motley, Apprenticeship in American Trade Unions (Baltimore: Johns Hopkins University Press, 1947).

National Manpower Council, A Policy for Skilled Manpower (New York: Columbia University Press, 1954).

--- Education and Manpower (New York: Columbia University Press, 1960).

--- Improving the Work Skill of the Nation (New York: Columbia University Press, 1955).

Albert Rees, The Economics of Trade Unions (Chicago: University of Chicago Press, 1962).

Arthur M. Ross, ed., Employment Policy and the Labor Market (Berkeley: University of California Press, 1965).

Steward Scrimshaw, Apprenticeship, Principles of Administration in Industry and Education (Wauwatosa, Wis., 1926).

--- Apprenticeship, Principles, Relationships, Procedures (New York: McGraw-Hill, 1926).

G. Williams, Recruitment to Skilled Trades (New York: Humanities Press, 1957).

--- Apprenticeship in Europe (London: Chapman Hall, 1963).

Public Documents

Industrial Commission of Wisconsin, Annual Report of the Apprenticeship Division 1961 (Madison, 1961).

--- Apprenticeship in Wisconsin 1911-32 (Madison, 1932).

--- Apprenticeship Law with Explanations (Madison, 1928).

--- Apprenticeship Law Bulletin, Vol. I, No. 4 (1912).

--- Apprenticeship Manual 1956 and 1961 (Madison, 1956 and 1961).

--- Commissioner of Labor, First Biennial Report (Madison, 1884).

--- First Report 1917 (Madison, 1917).

--- Apprenticeship Division, Historical Sketch of Wisconsin Apprenticeship: Trends and Present Status, **Bulletin No. 35** (Madiison, 1948).

--- Apprenticeship Division, Memorandum from the Director of the Apprenticeship Division to the Chairman of the Industrial Commission, January 20, 1965 (unpublished).

--- Apprenticeship Division, Monthly Reports of the Apprenticeship Division (Madison, 1945-60).

--- Apprenticeship Divsion, Project No. 25 (Madison, 1961).

United States Government, Department of Labor, Bureau of Apprenticeship and Training, Apprenticeship and Economic Change (Washington, 1964).

--- Apprenticeship in Carpentry Construction, Bulletin T-153 (Washington, D.C., 1962).

--- Apprenticeship in Masonry Construction (Washington, D.C., 1961).

--- Labor-Management Participation in Registered Apprenticeship (Washington, D.C., 1954).

--- Manpower Report to the President (Washington, D.C., 1964).

--- National Apprenticeship Program (Washington, D.C., 1957).

--- National Assignment Memo No. 39, July 12, 1954 (unpublished).

--- Skilled Labor Force, Bulletin No. T-154 (Washington, D.C., 1963).

--- Tulsa Apprenticeship Plan Proves Successful, by Bill Butler (a reprint).

The following unpublished documents are available in the archives of the State Historical Society, Madison, Wisconsin, under the title, "Administrative Files of the Apprenticeship Division of the Industrial Commission of Wisconsin".

W. F. Fairbairn, "Apprenticeship, Ancient and Modern."

--- "Fundamentals to Apprenticeship Operation."

Letter from the Commission of the Industrial Commission of Wisconsin to Mr. E. G. Cooley, November 1913.

Letter from the State Supervisor of Apprenticeship, Mr. Stewart Scrimshaw, to Professor Edwin E. Witte.

Letter from Mr. W. D. Immel to Mr. W. E. Hicks.

Letter from Mr. Weisand to Mr. W. E. Hicks.

Letter from Mr. Graham to Mr. W. E. Hicks.

Letter from the State Supervisor of Apprenticeship, Mr. Walter F. Simon, to Miss Annie McLenegan.

Memorandum from the Director of the Apprenticeship Division, Mr. Walter F. Simon, on G.I. Training in Wisconsin, 1952.

Report by Mr. H. C. Buell to the State Supervisor of Apprenticeship.

Report by Mr. Tarbell to the State Supervisor of Apprenticeship.

Other Reports and Abstracts

R. Hagemeyer, "An Investigation of Factors Considered in the Selection of Apprentices by Manufacturing Companies in Michigan," Dissertation Abstracts (July 1961).

State Board of Vocational and Adult Education, Report of the Occupational Coordinator for the Wisconsin Schools for Adult and Vocational Education (Madison, 1949).

*Wisconsin State AFL-CIO, Memo by Mr. John Hidenreich to the Executive Board, 1957.

*--- Minutes of the North Central States Apprenticeship Conference, 1962.

*--- Minutes of the Proceedings of the Annual Apprenticeship Conferences, 1946-49, 1953-56, 1958-64.

*--- Minutes of the Wisconsin State Joint Apprenticeship Committee (Plumbers) Meeting, Milwaukee.

--- Reports of the Proceedings of the Annual Conventions, 1944-62.

---

* Available only in the office of the Wisconsin State AFL-CIO in Milwaukee.

VT 003 621
How Much Instruction in Farm Machinery.

Nelson, Travis * Bear, W. Forrest

Pub Date - Sep67
MF AVAILABLE IN VT-ERIC SET. 4p.

*VOCATIONAL AGRICULTURE, AGRICULTURAL ENGINEERING, VOCATIONAL AGRICULTURE TEACHERS, COMPARATIVE ANALYSIS, *AGRICULTURAL MACHINERY, SCHOOL SURVEYS, EQUIPMENT, TIME BLOCKS, HIGH SCHOOLS, PHYSICAL FACILITIES, *INSTRUCTIONAL PROGRAMS, *TEACHING METHODS, Minnesota,

Questionnaires were sent to 150 high school vocational agriculture departments to determine the effect of various factors on the scope of farm machinery instructional programs for high school students and beginning and adult farmers in Minnesota. Data were tabulated for single teacher departments, multiple teacher departments, large shops, small shops, length of class period, 10 common farm machines, and 30 selected tools and supplies considered essential for teaching students about the machines. Some findings were--(1) The number of teachers in a department influenced the scope of the farm machinery instructional program, (2) A greater percentage of multiple-teacher departments provided instruction on eight of the 10 machines in the high school program and on six of the 10 machines in the beginning and adult farmer program than did single-instructor departments, (3) A larger percentage of the multiple-teacher departments taught units about eight of the 10 machines for six or more hours than did the single-teacher departments, and (4) There were more machine instruction and a larger number of tools and supplies in shops with more than 2,000 square feet. Conclusions were--(1) Departments with the largest shops, more than one instructor, 2-hour classes, and the greatest number of tools and supplies were teaching farm machinery a greater number of hours, (2) The significance of shop size should be emphasized since other factors are dependent upon it, and (3) With the increasing value of farm machinery inventory, complexity of machines, and opportunities in agricultural machinery related fields, vocational agriculture teachers are obligated to update their instructional programs and to improve their own understandings and abilities. This document appeared in "The Agricultural Education Magazine," volume 40, number 3, September 1967. (WB)

ERIC CLEARINGHOUSE
FOR VOCATIONAL AND TECHNICAL
EDUCATION

ED022065

Agricultural Education

Volume 40 September, 1967 Number 3

ALABAMA TEACHERS FIND TEACHING IN THE GREENHOUSE VERY EFFECTIVE.

FEATURING TEACHING EFFECTIVELY

1917 .... 50th ANNIVERSARY 1967
1st National Vocational Education Act

VT003621

THE AGricultural EDucation MAGAZINE

Vol. 40 September, 1967 No. 3

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

MANAGING ED

CAYCE SCARBOROUGH, *Edito*
State University, Raleig
THURSTON FAULKNER, *Business Manager,*
State Department of Education,
Montgomery, Alabama, 36104.
RALPH WOODIN, *Consulting Editor,* Ohio State University, Columbus, 43210.

SPECIAL EDITORS

REGION I — PHILIP EDGECOMBE, University of Massachusetts, Amherst, 01002.
REGION II — JOE BAIL, Cornell University, Ithaca, 14850.
REGION III — WILLIAM BINGHAM, University of Kentucky, Lexington, 40508.
REGION IV — GEORGE WIEGERS, University of Tennessee, Knoxville, 37916.
REGION V — JOHN THOMPSON, University of Wisconsin, Milwaukee, 53706.
REGION VI — RAYMOND AGAN, Kansas State University, Manhattan, 66502.
CARL HUMPHREY, State Department of Education, Jefferson City, Missouri, 65101.
REGION VII — JAMES C. ATHERTON, Louisiana State University, Baton Rouge, 70804.
MAX AMBERSON, State Dept. of Public Instruction, Helena, Montana, 59601.
REGION VIII — DWIGHT KINDSCHY, University of Idaho, Moscow, Idaho, 83843.
REGION IX — E. M. JUERGENSON, University of California, Davis, 95616.

AT LARGE

Books — RAYMOND CLARK, Michigan State University, East Lansing, 48823.
NVATA — JAMES WALL, Box 4498, Lincoln, Nebraska, 68504.
Pictures — GILBERT GUILER, Ohio State University, Columbus, 43210.
Post-Secondary — HOWARD SIDNEY, Agricultural and Technical College, Cobleskill, New York, 12043.
Research — GEORGE O'KELLEY, University of Georgia, Athens, 30601.

The professional journal of Agricultural Education. A monthly publication managed by an Editorial Board. Publication office at The Lawhead Press, Inc., 900 East State St., Athens, Ohio 45701.

EDITING-MANAGING BOARD

DAVID R. MCCLAY, Pennsylvania State University, University Park, *Chairman*; GEORGE HURT, State Department of Education, Austin, Texas, *Vice-chairman*; RALPH WOODIN, Ohio State University, Columbus, *Secretary*; T. L. FAULKNER, State Department of Education, Montgomery, Alabama; SAM STENZEL, Russell, Kansas; NEVILLE HUNSICKER, U. S. Office of Education, Washington, D. C.; R. W. MONTGOMERY, Auburn University, Auburn, Alabama; GERALD PAGE; Nixa, Missouri; CAYCE SCARBOROUGH, North Carolina State University, Raleigh; ORVILLE THOMPSON, University of California, Davis; ELVIN WALKER, Norman Park, Georgia; JAMES WALL, Box 4498, Lincoln, Nebraska.

EDUCATIONAL PRESS ASSOCIATION OF AMERICA

ABLE OF CONTENTS

Editorial 51
Theory and Practice 51-52
Letters to the Editor 52-53
How Good Is My Teaching? 54
Charles S. Wiggins
Don't Be So Slow — Get An SMV Campaign Going...55
John Scott
How Much Instruction in Farm Machinery? 56-57
Travis Nelson and W. Forrest Bear
Should I Enroll In Vo Ag?? 58
Donald Barber
INDEX TO VOLUME 39 59-61
THE AGRICULTURAL EDUCATION MAGAZINE
Ag Ed Society Helps In Recruiting 62
Herbert Bruce, Jr. and William Bingham
Effective Teaching In Welding 63
Duane Wahlstrom
The John Deere Fellowship 63
Ag Employees Use Training In Electric Motors....64-66
Thomas Hoerner and Robert Benson
Adults Need Instruction In Small Engines 66
Garry Heshelman
THEMES FOR THE AGRICULTURAL EDUCATION MAGAZINE 66
Greenhouse Becomes A Reality 67
Fred Cornaby
Networks For Progress 68-69
Carl W. Hall
Book Reviews 69-71
Raymond Clark, Guy Timmons and Donald Meaders
Stories In Pictures 72
Gilbert S. Guiler

Subscription price, $3 per year. Foreign subscriptions $3.25. Student subscriptions in groups one address, $1 for October-May. Single copies .50 cents. In submitting subscriptions designate new or renewal and address including zip code. Send all subscriptions to T. L. Faulkner, Business Manager, AGRICULTURAL EDUCATION MAGAZINE, State Department of Education, Montgomery, Alabama, 36104.

Articles and pictures should be sent to the Editor or to the appropriate Special Editor.

Second-class postage paid at Athens, Ohio.

Mr. Nelson

HOW MUCH INSTRUCTION IN FARM MACHINERY?

Dr. Bear

TRAVIS NELSON, Vo Ag Teacher, Winona, Minnesota
and
W. FORREST BEAR, Agricultural Engineering, University of Minnesota

Vocational Agriculture Instructors generally agree that farm machinery instruction is an important phase of the Agriculture Mechanics program in Vocational Agriculture; however, many instructional programs do not reflect this importance.

A study[1] designed to determine the effect of various factors on the scope of the farm machinery instructional programs for high school students and the beginning and adult farmers was initiated at the University of Minnesota.

Method

Questionnaires were submitted to 150 vocational agriculture departments in Minnesota High Schools. The data received were tabulated according to the following criteria: single (63) and multiple (28) teacher departments, large (58) and small (33) shops, length of class period, ten common farm machines, and thirty selected tools and supplies considered essential for teaching the ten farm machines.

Findings

The number of teachers in a department influenced the scope of the farm machinery instructional program. A greater percentage of the multiple teacher Departments provided instruction on eight of the ten machines in the high school program, and on six of the ten machines in the beginning and adult farmer program than did the instructors in single departments. A larger percentage of the multiple teacher departments taught eight of the ten machines for six or more hours than did the single teacher departments. Note Tables I and II.

* * *

TABLE I. Hours of High School Machinery Instruction in Multiple Teacher Departments

	Hours of Instruction						Total Number Teaching (N = 28)	
	0		1 - 5		6 or more			
Farm Machine	No.	%	No.	%	No.	%	No.	%
Plow	4	14.3	19	67.8	5	17.9	24	85.7
Mower	7	25	17	60.7	4	14.3	21	75
Row Crop Planter	6	21.4	17	60.7	5	17.9	22	78.6
Crop Sprayer	5	17.9	18	64.2	5	17.9	23	82.1
Grain Drill	9	32.1	17	60.7	2	7.2	19	67.9
Baler	8	28.6	15	53.5	5	17.9	20	71.4
Combine	6	28.6	15	53.5	5	17.9	20	71.4
Corn Picker	11	39.3	15	53.5	2	7.2	17	60.7
Manure Spreader	20	71.4	8	28.6	0	0	8	28.6
Forage Harvester	16	57.1	11	39.3	1	3.6	12	42.9
All Machines	94		152		34		186	66.4

TABLE II. Hours of High School Machinery Instruction in Single Teacher Departments

	Hours of Instruction						Total Number Teaching (N = 63)	
	0		1 - 5		6 or more			
Farm Machine	No.	%	No.	%	No.	%	No.	%
Plow	15	23.8	38	60.3	10	15.9	48	76.2
Mower	18	28.6	40	63.5	5	7.9	45	71.4
Row Crop Planter	20	31.8	34	53.9	9	14.3	43	68.2
Crop Sprayer	20	31.8	38	60.3	5	7.9	43	68.2
Grain Drill	22	34.9	37	58.7	4	6.4	41	65.1
Baler	23	36.5	28	44.4	12	19.1	40	63.5
Combine	26	41.3	29	46.0	8	12.7	37	58.7
Corn Picker	30	47.6	25	39.7	8	12.7	33	52.4
Manure Spreader	37	58.7	24	38.1	2	3.2	26	41.3
Forage Harvester	35	55.6	25	39.6	3	4.8	28	44.4
All Machines	246		318		66		384	61.0

---

[1] Nelson, Travis N. A study of Farm Machinery Instruction in Minnesota Vocational Agriculture Departments. Unpublished MA Colloquium Paper, University of Minnesota Agricultural Education Library, St. Paul, Minnesota, 1967.

Shop Size

Shop size influenced the high school farm machinery instructional program more than it did the beginning and adult farmer programs. Instruction was provided, considering all ten farm machines, in 71 percent of the possible cases in shops having more than 2,000 square feet as compared with 47.9 percent of the possible cases in shops with less than 2,000 square feet. Instruction on the plow was the most frequent, whereas instruction on the manure spreader was less prevalent. All ten machines were taught to beginning and adult farmers in 15.7 percent of the possible cases in the larger shops as compared to 15.8 percent in the smaller shops. Instructional time on the major farm machines as the combine, corn picker, drill and baler was less than other machines, namely, the plow, mower, planter and sprayer when compared by size of shop.

The agricultural shops with more than 2,000 square feet of floor space had a larger number of the selected tools and supplies, 26-30, than did the smaller shops, 20.7 and 3.0 percent respectively. Fifteen or less of the selected tools and supplies were owned by 6.9 percent of the departments with 2,000 square feet or more and by 30.3 percent of the departments having less than 2,000 square feet.

The multiple teacher departments with 2,000 square feet or more of shop area were better equipped than the single teacher departments with the same floor area. Fifteen percent of the schools with larger shops and single teachers had twenty-six or more of the thirty selected items and 33.3 percent of the schools with larger shops and multiple teachers had this same number of tools and supplies.

Instructional Period

The length of the agricultural mechanics class period affected the scope of the farm machinery instructional program. One hundred percent of the instructors with a two hour class period taught the plow, row crop planter, crop sprayer, baler and combine. The plow was taught by 77.1 percent, planter by 68, sprayer by 69.9, baler by 62.7 and combine by 59 percent of the instructors with one hour class periods.

The instructors with the longer class periods spent more time teaching each machine. When averaging instruction for all the ten machines, 18.8 percent of the instructors with a two hour period compared to 8.4 percent of those with a single period provided six or more hours of instruction.

Why not let practical measures function in recruiting Agricultural Education students? Eleven students who did Directed Teaching agreed to do something about the shortage of Vocational Agricultural Teachers after participating in a seminar on the problem. This group brought in the names of twenty-six students whom they sold the idea to continue in Agricultural Education. Students are now writing the Agricultural Education Department stating that they will join the Agricultural family at the College in September. In several cases conferences were held with the boy and his parents about coming to College and majoring in Vocational Agriculture. The Department of Agriculture Education gave each future teacher a special citation for having done an acceptable job. (C. E. Dean, Teacher Education A & T University, Greensboro, N.C.)

Teaching Method

A comparison of high school class teaching methods used by instructors with single and double periods did not vary a great extent for the plow, mower and planter. The high school class instructors with two hour periods gave fewer reading assignments, worksheets and job sheets to their students than did those with the one hour period. Adjustment and service of the machine was the activity most generally performed by the high school students in the shop rather than assembly or repair of the machine.

The teaching methods used for beginning and adult farmers differed from those used in teaching high school students. Very few teachers (11.8 percent for the plow) had assigned reading for the beginning and adult farmers, whereas better than 60 percent had assigned reading on the plow for the high school students. Worksheets and job sheets were also used to a lesser degree with the beginning and adult farmers. Shop demonstrations were comparable for both groups, whereas demonstrations on the farms were more frequently used for beginning and adult farmers than for the high school classes.

Occupational Training

A number of the vocational agriculture instructors believed they are training their students sufficiently during the farm machinery instruction to qualify them for jobs related to farm machinery. Fifty percent or more of the instructors considered their students were qualified to enter the following occupations; mechanics helper, truck driver for a feed mill, or a farm cooperative, feed mill employee, bulk fertilizer truck driver and farm hardware equipment -employee, which represented five of eighteen listed occupations.

The relationship between the number of hours the shop was used for other classes and the scope of the farm machinery program revealed that instructors in shared shops spent as much or more time teaching these machines as those whose shops were used entirely by the agricultural instructor.

Conclusions

This study indicated that the departments with the largest shops, more than one instructor, two hour class periods, and the greatest number of tools and supplies were teaching farm machinery a greater number of hours. The significance of shop size should be emphasized since other factors are dependent upon it.

With the increasing value of the farm machinery inventory, complexity of the machines and the increasing opportunities in agricultural machinery related fields the vocational agriculture instructors are obligated to update their instructional programs and to improve their own understandings and abilities.

VT 003 946   ED 014 616

Post-High School Curriculum for the Grain, Feed, Seed and Farm Supply Industry.

Clark, Raymond M. * Oliver, Alvin E.

Pub Date - Nov66
MF AVAILABLE IN VT-ERIC SET.   5p.

*VOCATIONAL AGRICULTURE, *AGRICULTURAL SUPPLY OCCUPATIONS, *CURRICULUM PLANNING, CURRICULUM GUIDES, POST SECONDARY EDUCATION, EDUCATIONAL NEEDS, SCHOOL INDUSTRY RELATIONSHIP, EMPLOYERS,

A committee of education and industry representatives recommended 20 essential and three substitute courses for a 2-year post-high school program for training young men for the national grain, feed, seed, and farm supply industry. Some essential courses were (1) Soil Science I and II, (2) Crop Production, (3) Applied Animal Biochemistry, (4) Operations I and II, (5) Grain Grading, (6) Applied Animal Nutrition, (7) Communications I and II, (8) Applied Animal Husbandry I, (9) Agricultural Chemicals, (10) Salesmanship, (11) Physical Facilities and Care of Equipment, (12) Agricultural Economics and Marketing, and (13) Structure of the Grain, Feed, Seed, and Farm Supply Industry. Optional courses to be substituted where appropriate were (1) Seed Production, Preparation, and Analysis, (2) Business Law, and (3) Applied Animal Husbandry II. The need for occupational experience as part of the training program was emphasized. A completed curriculum guide which was submitted to the Office of Education, contained outlines for each of the 23 courses including lecture-discussion topics with laboratory exercises, suggested teacher qualifications, lists of laboratory equipment and supplies, suggestions for library usage, and an extensive bibliography. Inservice training of teachers through cooperative effort of industry and educational institutions and instructional materials are needed. This document appeared in "The Agricultural Education Magazine," volume 39, number 5, November 1966. (WB)

VT 003 94

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

The Agricultural Education Magazine, *November 1966*

Alvin Oliver

Post-High School Curriculum for the Grain, Feed, Seed and Farm Supply Industry

Raymond Clark

RAYMOND M. CLARK, *Michigan State University*

ALVIN E. OLIVER, *Executive Vice President, Grain and Feed Dealers National Association*

ED022065

VT 003 946

What kind of program do we need for the post-high school training of young men for the grain, feed, seed and farm supply business?, was the key question before a group of business men meeting at Airlie House in Virginia in December, 1965. The meeting was called by the Grain and Feed Dealers National Association to help make plans for the preparation of a curriculum guide to fulfill a contract with the U. S. Office of Education.

The meeting was significant in that it was called by the association to assist in establishing the guide lines and to make recommendations as to the kind of employees needed by the industry. This responsibility was much like that of an advisory committee called to give advice on any other vocational program. However, the fact that the Office of Education had contracted with the association and that the meeting was called and conducted by the association staff makes it particularly significant.

Membership of the committee was also significant. Several of those representing industry were formerly professors in well-recognized universities. Some had been outstanding teachers of vocational agriculture and are now occupying important positions in their respective firms. Others are professors in universities where their work is very closely allied to the needs and practices of the industry.

The committee was challenged to think through and finally to recommend the courses they would suggest for a two-year post-high school program consisting of four 17 week semesters. They were not presented with a proposed program and asked to react to it and to give it their stamp of approval. After working long hours for the three days and after much discussion the members listed twenty-three courses. They felt that twenty of these would be essential, but that three might be used as substitute courses depending on the geographic area in which the program would be offered. For example, in some parts of the country a study of beef cattle feeding, management, and parasite control would be needed while in other areas a similar study of poultry or dairy, or swine might be more appropriate. Following are titles of the courses in the sequence in which they should be offered:

First Semester
- Crop Production
- Soil Science I: Fertility
- Applied Animal Biochemistry
- Structure of the Grain, Feed, Seed and Farm Supply Industry
- Communication I: Written, Graphic

Second Semester
- Grain Grading
- Soil Science II: Fertilizers
- Applied Animal Nutrition
- Agricultural Economics and Marketing
- Communications II: Oral, Illustrated

Third Semester
- Retail Farm Supply Merchandising
- Feeds, Ingredients, Additives and Food and Drug Regulations
- Operations I: Purchasing, Financial Control
- Applied Animal Husbandry I: Beef, Sheep, Dairy
- Seminar: Personal Relationships, Personal Finances and Management

Fourth Semester
- Grain Handling, Warehousing and Merchandising
- Operations II: Functions of Management, Financing
- Agricultural Chemicals
- Salesmanship
- Physical Facilities and Care of Equipment

Optional Courses which may be substituted by the school administrator where appropriate:
- Seed Production, Preparation and Analysis
- Business Law
- Applied Animal Husbandry II: Swine, Poultry, Horses

The committee recognized the necessity for a well rounded program without any walls between the vocational education programs. They looked at the "package" of courses needed for adequate training at the vocational-technical level. Consequently they listed such courses as *Agricultural Economics and Marketing; Communications,* including graphics and visuals; *Salesmanship; Crop Science; Soil Science; Operation of the Business* and others without regard to the traditional vocational service that would be responsible for the courses.

Experience

The committee did however place a very strong emphasis on the need for occupational experience as part of the training program. These representatives of the industry felt very sure that members of their association and others would be happy to cooperate in providing excellent occupational experience for students. They expect that such programs will be well planned and well coordinated by the school personnel.

The opportunity to visit several different types of business associated with the grain, feed, seed and farm supply industry and to work with the managers and others in these firms provided a rare opportunity for an "ivory tower" vocational educator to discover how those on the receiving end view the activities and the product of vocational teacher education programs. This kind of experience is one which should influence all training programs to a much greater degree than in the past.

The Guide

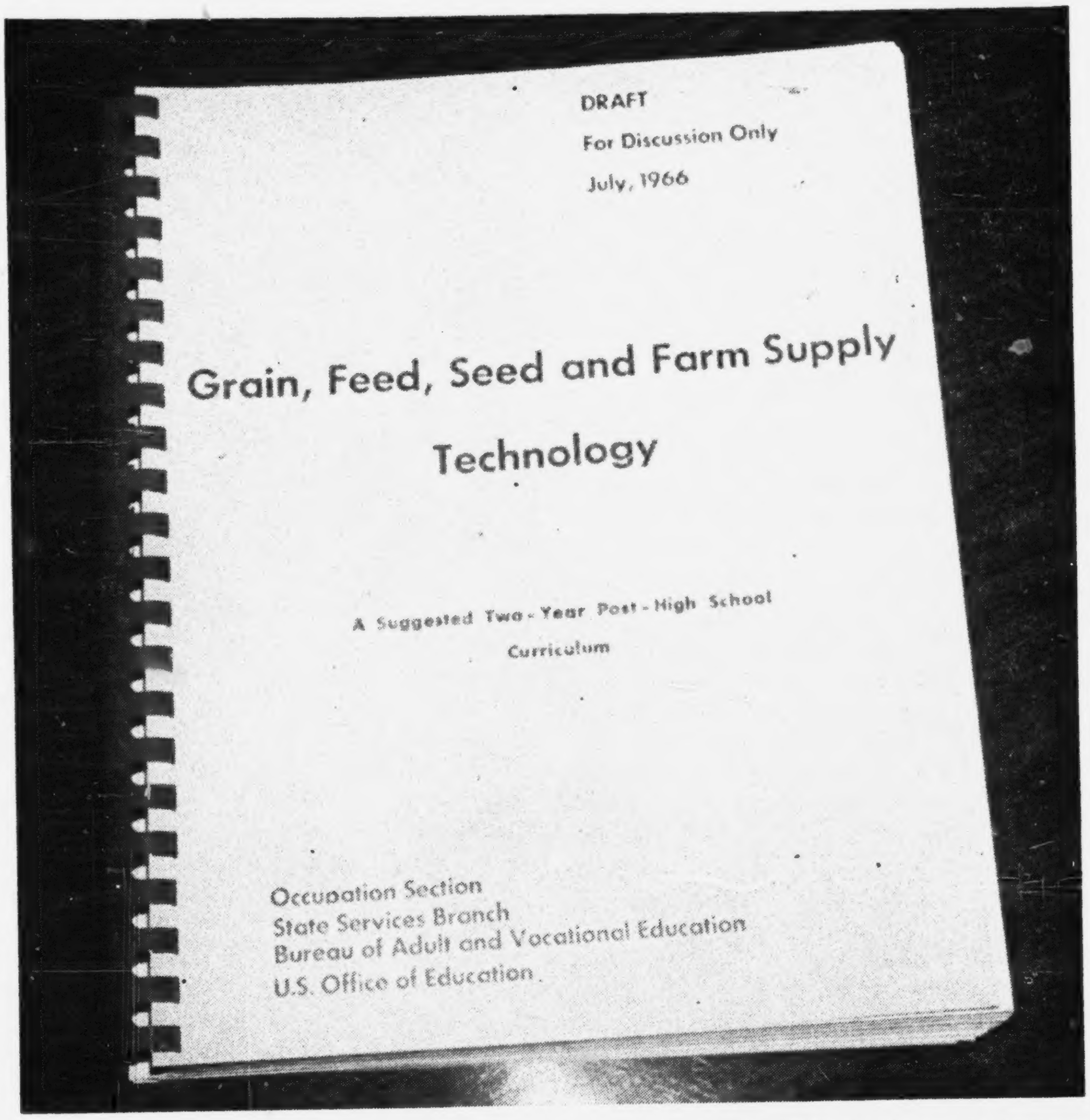
The curriculum guide which was turned over to the Office of Education on July 1, contained outlines of each of the twenty-three courses, including suggested lecture/discussion topics and laboratory exercises; suggested teacher qualifications; laboratory equipment and supplies; suggestions for library; and an extensive bibliography.

The problem of identifying and recruiting teachers for the program is likely to be a serious one for many years. In some cases it will be possible to recruit men from industry for part-time teaching. A few retired persons who have had successful experience will be available to teach. In other cases teachers of agriculture, teachers of distributive subjects, communications teachers and others with appropriate training and experience may become available for teaching in the program.

Regardless of the sources of teachers it is important that application be made of the content to the needs of the industry. For example, as students study

Dr. Raymond Clark, College of Education, Michigan State University, took a leave of absence to write the Curriculum Guide for the Grain and Feed Dealers National Association. He was assisted by an Industry-Educators Advisory Committee which recommended the Course of Study upon which the 2-year program is based.

The Curriculum Guide was developed under contract between the Grain and Feed Dealers National Association and the U.S. Office of Education. Alvin E. Oliver is Executive vice president of the national association.


DRAFT
For Discussion Only
July, 1966

Grain, Feed, Seed and Farm Supply
Technology

A Suggested Two-Year Post-High School
Curriculum

Occupation Section
State Services Branch
Bureau of Adult and Vocational Education
U.S. Office of Education

The Curriculum Guide is a 436-page book suggesting a two-year post high school curriculum.

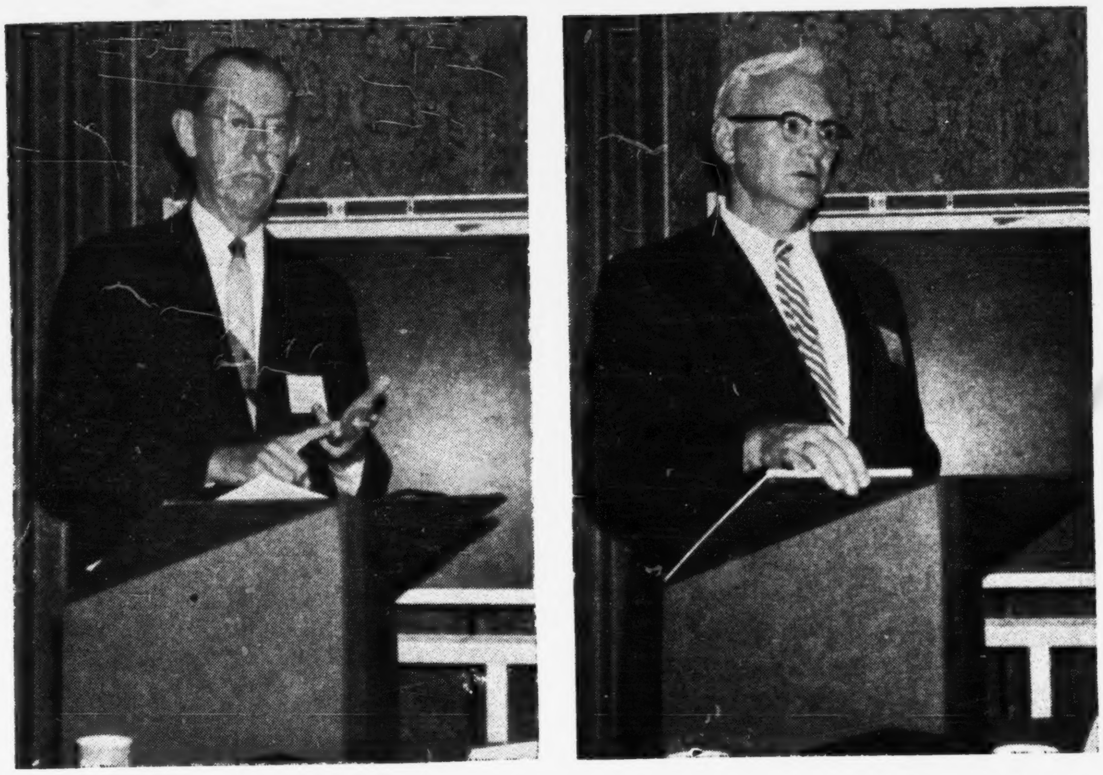
principles of salesmanship, their laboratory activities should be geared to selling merchandise typically offered by the farm supply business. In the same way application of content of courses in *Feeds and Feeding; Agricultural Chemicals; Agricultural Economics* and others should be made to the needs of the grain, feed, seed and farm supply business.

To actually get application of the content of the courses to the industry will require teachers who (1) have some understanding and willingness to make the applications as part of their class work, and (2) who have background of experience closely enough associated with the industry to make intelligent application. To assist in this procedure, field trips with students to visit appropriate aspects of the business will be helpful.

Next Steps

Teacher education: Many avenues present themselves as next steps in this program. One of the first deals with programs of teacher education. It is desirable for industry and teacher education institutions to "team up" to provide specific kinds of in-service training for

(Continued, page 110)



Primary representatives of the U.S. Office of Education authorizing the development of the curriculum guide were:

(1) Neville Hunsicker, Chief, Agricultural Education, Occupations Section, U.S. Office of Education Washington, D.C.

(2) Dr. Walter Brooking, Program Specialist, Technical Education, Occupations Section, U.S. Office of Education, Washington, D.C.

Clark and Oliver

(Continued from page 109)

teachers who are involved at the vocational-technical level. The facilities and equipment of industry are very difficult to duplicate by the school system. Even though finances might be available, there are special hazards involved in the use of grain, feed, and seed processing equipment and in the handling of agricultural chemicals and fertilizers which make it inadvisable to house such equipment in a school building.

This will make it necessary for some of the work to be taught in plants either as part of the work experience program or in classes held at times when the plant is not open for commercial business.

Other aspects of teacher education which must be developed include programs to help teachers integrate and apply the subject matter of the various courses to the industry. This will involve a better understanding of the industry on the part of all teachers.

Some representatives of industry caution that educators need to limit the number of centers in which training will be offered, and to make sure that high standards of training be maintained. This suggests that specialized teacher education programs for the grain, feed, seed and farm supply business might be developed in relatively few teacher education institutions located where there are adequate facilities, both in the university and in the industry to provide the training. If this is to be accomplished, it will be necessary to develop a high degee of cooperation between the institutions in terms of enrollment of students, recording of credits and assessment of outstate fees.

Instructional Materials: Closely allied to problems of teacher education is the need for instructional materials. As the curriculum guide was developed, it became increasingly evident that text materials, as well as visuals and other items are urgently needed. Many examples can be cited. However one will be sufficient to illustrate the need. A book or bulletin on structure of the total industry is needed for use by teachers and students. Materials dealing with small segments of the subject can be found in many places, but a complete document covering the total industry is not available. In other cases it is necessary simply to prepare materials from the point of view of an employee in the industry as contrasted with material written from the point of view of the farmer producer or from the point of view of the consumer. In every case the suggestion of sound eithical principles and of service to the customer should be included in the materials.

Several key persons in the development of the Curriculum Guide are shown in this photo, left to right:
Mrs. Karen Shiflett, Assistant Coordinator of the Project, Grain & Feed Dealers National Association.
Dr. Raymond Clark, Michigan State University, Coordinator and author of the project.
Alvin E. Oliver, Executive Vice President of the Grain and Feed Dealers National Association and Project Manager.
William Keating, Counsel, Grain & Feed Dealers National Association.

For the preparation of much of the needed text materials it will be important to again call upon members of the Grain and Feed Dealers National Association for suggestions and help. The association is able to identify sources of information and help in the preparation of materials that would be difficult for educators to tap. On the other hand, the organization and presentation of the materials must be directed by an experienced educator to be of greatest help to the students and teachers.

Many additional steps need to be taken to implement the program. Included are such activities as identification, guidance and recruiting of students; building and equipping adequate laboratories; in some areas, the development of adequate administrative machinery for the organization and operation of the program; and the identification of need and job opportunities to justify the organization of the program. State and local advisory councils should be organized with the industry well represented in the membership. These councils will be able to provide valuable information and assistance on many of the next steps to be taken for the implementation of the program.

Glenn Z. Stevens

(Continued from page 105)

Other agriculture. This is not an instruction area with a unified body of subject matter content. Rather it is a classification that includes certain units from the other instruction areas, and units introductory to further education for employment in specialized businesses and services, education, research, and government. Examples of other agriculture occupations are vocational agriculture instructor, county agricultural extension agent, ASCS compliance supervisors and farm loan officer.

Comprehensive lists of occupational titles in all of the areas of this classification are given in a recent publication titled *Occupational Guidance for Off-Farm Agriculture*. It may be obtained from the Center for Vocational and Technical Education, The Ohio State University. The occupational titles found in recent state studies are compared with titles in the new *Dictionary of Occupational Titles*, third edition. Additional guidance information for teachers of agriculture and counselors is presented in a new form.

VT 003 949 ED 015 300

Agricultural Education in the Community College, Philosophy and Programs.

McCollum, Earl
Pub Date - Nov66
MF AVAILABLE IN VT-ERIC SET. 4p.

*COMMUNITY COLLEGES, *AGRICULTURAL EDUCATION, *AGRICULTURAL TECHNICIANS, EDUCATIONAL PROGRAMS, TECHNICAL EDUCATION,

Rapid change in agriculture requires that today's agriculturalist be a well-educated articulate technician. Community colleges can contribute their greatest influence on the future of our society and nation by offering specialized agricultural technician training for both those entering the field and those wishing to update their knowledge and skill in the present area of employment. Colleges located in agricultural areas offer technical programs in production agriculture. Courses included are soils, agricultural chemicals, horticulture, crop management, agricultural business procedures, welding, irrigation, and drainage. Students also enroll in general education courses such as communication skills, mathematics, psychology, health, American institutions, report writing, and economics. Other programs are offered for equipment repairmen, ranchers and range managers, landscaping and public grounds management, and outdoor recreation techniques and administration. This article is published in "The Agricultural Education Magazine," volume 39, number 5, November 1966. (WB)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
IS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE
RSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS
ATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION
SITION OR POLICY.

THE AGRICULTURAL EDUCATION MAGAZINE, *November 1966*
v. 39, no. 5

Earl McCollum

Agricultural Education In the Community College

**EARL McCOLLUM, Head, Agriculture Department,
Treasure Valley Community College, Ontario, Oregon**

Can anyone deny that today's world of agriculture is rapidly becoming one of mechanized complexity, and that today's agriculturist must be a well educated, articulate technician?

Many former agriculturalists were able to function satisfactorily with only a high school education and were able to learn the specialized skills as they worked. In today's agriculture such a broad base of technical knowledge and skill is being required as to severely limit people with only a high school education. Knowledge is required in many technical areas such as soil science, fertilizers, pest controls, management, and many others. Skills are required in soil preparation, chemical usage, irrigation, machinery maintenance and repair, record keeping and various manipulative skills.

As these areas of knowledge and skill become more and more complex, they become highly specialized and require more of the individual's time. As a result we are living in an era of specialists in agriculture. There already are specialists in management, soils, crops, livestock, horticulture, and others at the professional level and there are now being developed technical positions in these same areas to give agriculture producers the advantages of modern technology. Fertilizer companies are seeking technicians who understand soils, chemistry, and fertilizers to coordinate between them and the farmer. Machinery dealers are seeking technicians who understand soil working, crop planting, crop harvesting, machinery maintenance and machinery function and who can represent them to the farmer. Food processors are seeking technicians who understand quality of product, pest control, marketing and harvesting so the importance of these factors in processing can be related to the farmer.

Community College Philosophy

It is in these areas that the challenge of the future lies. Those persons who operate between the producer and at either end, the supplier or the processor, must be specialists in their area. This will require training and preparation beyond high school and it is this person the community college hopes to prepare. It is here at the technician level that community colleges can contribute their greatest influence on the future of our society and nation.

Every day we see the expansion of civilization with its attending technical complexities: the aviation industry is spending 1½ billion dollars annually in expansion and will need 50,000 new employees in four years, not counting replacements; in thirty years ¼ of United State electricity will be generated by atomic power; in ten years hand-labor in any industry will be virtually non-existent. People must be prepared to cope with this world; moreover, they must be prepared to adapt and change as their social climate demands. Herein lies the unique opportunity of the Community College with its close ties to the immediate social community and its open door policy of education for those who can profitably use it.

The ease of moving in and out of the educational stream allows a person displaced by technology to dispel the despondency so often accompanying this event by quickly re-tooling to again enter the work force, possibly without even having lost a day of work. Industry has been involved in this type of procedure for years with machines. Now, we must become involved in the same "re-tooling" procedure with personnel in agriculture. Many times this process can be accomplished at company expense. The Community College is again in a unique position being tax supported which creates a minimum of expense allowing greater freedom for individual "re-tooling."

Many programs are operating in Community Colleges aimed at preparing agricultural technicians who are specialized enough to enter the agricultural labor force. These programs are open to both those persons preparing to enter the field and to those persons in the field who wish to up-date their knowledge. There are also technical programs to aid persons engaged in production or preparing to enter production agriculture. Anyone who can profit from technical training of this nature is welcome in the classes and an attempt is being made to offer any course or program that people in the field can use.

Community College Programs in Agriculture

Colleges located in areas with intensive agriculture supporting a large portion of the economy are offering technical programs in Production Agriculture which include such technical courses as soils, agricultural chemicals, horticulture, crop management, agriculture surveying, livestock management, agricultural business procedures, welding, irrigation, and drainage. Along with these technical courses students receive general education in communication skills, mathematics, psychology, health, American Institutions, report writing, and economics.

A technical agriculture program is being offered in some Community Colleges that incorporates all of the above training with the added training of laboratory work to equip the student for employment in processors' labs.

The farm equipment dealers have requested additional trained equipment repairmen thereby opening a technical field for many persons with mechanical aptitudes. This program adds to general education courses the following technical work: basic agriculture mechanics, welding, drafting, practical hydraulic and pneumatic systems, agricultural power units and machinery, machine tool, farm machinery repair, agricultural service procedures, and industrial management.

Some Community Colleges are offering technical training for ranchers and range managers. The technical work in these programs include: water resources development, agricultural surveying, agricultural business procedures, livestock management, agricultural chemicals, soils, crop management, range and forest plants, range manage-

(Continued, page 119)

VT 003 949

James J. Albracht

(Continued from page 118)

The jury of twenty four experts was also asked to indicate at which loci each of the competencies could be taught. The number of competencies which could be taught at each of the six loci were: dealer or company school, 40; on-the-job[4], 40; post high school, 33; adult, 32; four year college, 31; high school, 28.

Local Matter

Of the forty competencies, seven were considered to be specifically related to the particular feed company, and the jury members indicated that these seven competencies could only be taught at the "dealer" and the "on-the-job" loci. The seven competencies were: thoroughly understands his company's feed products; understands other products sold by his business (company); understands the policies of his business (company); knowledge of the feed products of competitors; ability to fill out company invoices and sales contracts; understands the problem of feed dealers in the community; and understands the criteria for appraising prospective feed dealers. Of the remaining thirty-three competencies the jury members considered that each of the competencies could be taught at the "post-high school" locus, and that twenty-eight of the thirty-three competencies could be taught at the "high school" locus.

Post-High School

The five competencies which were considered to be possible at the "post-high school" locus but not at the "high school" locus were: understands the research findings of livestock (poultry) feeding trials; ability to write up and interpret the feeding results of his customers and convey them to management; understands the promotional techniques for increasing feed sales; ability to express feeding and nutrition information to groups; and knowledge of the methods used in collecting bills.

---

[4] On-the-job—Any training given in the place of business exclusive of that given in cooperative occupational programs between the employer and an educational institution.

Earl McCollum

(Continued from page 116)

ment techniques, wildlife management, and veterinary medicine.

New and Expanding Fields

A new field for technicians is opened in landscaping and public grounds management. This curriculum includes general education and the basic agricultural courses plus tree and shrub identification, plant disease and insect problems, lawn and garden equipment use and maintenance, greenhouse and nursery management, landscaping and public grounds management, turf grass management, and park management and administration.

Another rapidly growing field as Americans gain more leisure time, is that of outdoor recreation. The technical offerings at Community Colleges include techniques of outdoor recreation, sports equipment repair, emergency care and rescue, recreation camp counseling, range and forest plants, earth science technology, and administration of recreation camps and parks.

Summary

The results of this study appear to indicate that the competencies identified as essential for the performance of the sales activities and the loci at which the competencies could be taught could be considered by those responsible for the development of curricula and courses of study for persons in or preparing to enter positions which require the performance of sales activities. For example, the person who is responsible for developing the courses of study for the high school program with the help of the local advisory committee could decide which of the nine sales activities could be used as a basis for the instruction. The curricula director, teacher and the advisory committee could further select the competencies to be included in the educational program from those which are essential for the performance of the selected activities, and which also could be taught at the "high school" locus.

Employment Opportunities in Agriculture

With the world/population/food ratio such as it is and the population growth of the world in an ever-expanding trend the general outlook for employment in agriculture is extremely good. This statement must be coupled with the admonition that the outlook for employment of unskilled persons in agriculture is extremely poor. This coincides with the realization that agriculture is extremely complex requiring skills and knowledge which were previously unnecessary.

More specifically in this country and in the technician occupations, job opportunities are rapidly opening. Technicians work on a team with engineers, scientists, supervisors, and skilled craftsmen, converting theories and ideas into products and processes—the technician is the pivot-man on this team.

Technicians participate in research and development. They assist in designing and perfecting machines, processes, materials, and service for our increasingly complex world of work. They consider why things work as well as how things work. They work with their minds as well as their hands. Technicians' jobs frequently require the ability to apply scientific principles and to solve designs, process or service problems. Other technical jobs demand extensive knowledge of laboratory equipment, procedures and techniques.

Technicians of this nature are needed in all types of agricultural service industries, fertilizers, chemicals, seed dealers, machinery and equipment companies. Food processing companies are utilizing technicians as field men, in laboratories, and on the quality control line. Governmental agencies are using technicians in a non-career capacity in soil conservation and range management. Highway departments and public agencies are using technicians in managing the landscaped areas utilized by the public.

Future Bright

These vast areas of opportunity have been expanding in the past few years and show no signs of decreasing in growth in the next few years. With this situation in mind the young man considering choices for a career can select from many avenues to travel in the world's most vital vocation—Agriculture. One of the avenues for education in agriculture beyond the high school is the Community College.

VT 003 950 ED 015 301

What Does it Take to Sell Feed.

Albracht, James J.
Pub Date - Nov66
MF AVAILABLE IN VT-ERIC SET. 4p.

*VOCATIONAL AGRICULTURE, *AGRICULTURAL TECHNICIANS, *AGRICULTURAL SUPPLY OCCUPATIONS, EDUCATIONAL NEEDS, *JOB SKILLS, EMPLOYMENT OPPORTUNITIES, HIGH SCHOOLS, POST SECONDARY EDUCATION, ON THE JOB TRAINING, AGRICULTURAL SKILLS, FEED INDUSTRY, SALESMANSHIP,

To determine the vocational competencies necessary for the performance of nine essential sales activities in the feed industry, a jury of 24 feed dealers, sales training directors, agricultural education researchers, and business education researchers made "yes" and "no" determinations for 40 competencies. The number of competencies considered essential for each of the nine activities was--(1) sells direct to producer, 39, (2) assists local dealers in promoting use of specific feeds, 38, (3) assists farmers in planning feeding programs, 37, (4) assists local dealer in promotional campaigns and feed and grain clinics, 37, (5) assists farmers to see through their own problems, 36, (6) follows up on results obtained by customers and reports them to management, 36, (7) sells to customer across the counter, 36, (8) recognizes abnormal and detrimental practices and animal health conditions, 31, and (9) solicits local dealers to sell company products, 27. The jury also indicated the number of competencies which could be taught at each of six educational facilities -- (1) dealer or company school, 40, (2) on-the-job, 40, (3) post-high school, 33, (4) adult, 32, (5) 4-year college, 31, and (6) high school, 28. Competencies identified as essential should be considered in the development of curriculums and courses of study for those in or preparing to enter sales positions in the feed industry. This article is published in "The Agricultural Education Magazine," volume 39, number 5, November 1966. (WB)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE
ON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS
D DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION
ION OR POLICY.

THE AGRICULTURAL EDUCATION MAGAZINE, *November 1966*
v. 39, no. 5

What Does It Take To Sell Feed?

JAMES J. ALBRACHT, Michigan State University

What vocational competencies are necessary for the performance of nine sales activities essential for the performance of the sales function in the feed industry? At which loci[2] could these competencies be taught? A study was made to find the answers to these questions.

In previous research conducted by Clark[3] of the Michigan State University, twenty-eight activities were identified as being necessary for the performance of the sales function in the feed industry. Of the twenty-eight activities, the nine most important activities as rated by a jury of twelve feed industry experts were selected for this study. The nine activities had an average score of 3.5 or more when a five point scale was used: 0—not needed; 1—little importance; 2—some importance; 3—very important; and 4—essential.

Procedure

The author developed an interview instrument which included forty competencies which might be considered essential for the performance of the nine sales activities.

A jury of twenty-four experts was selected and interviewed, with six representatives from each of four sub-areas: feed dealers; sales training directors; agricultural education researchers; and business education researchers. The jury members were asked to make "yes" or "no" determinations for the forty competencies for the performance of each of the nine sales activities. Therefore each of the forty competencies could have a total competency frequency of 216 (9 x 24) if each of the twenty-four jury members indicated that the forty competencies were essential. The competency frequencies are listed in Table I.

Essential

The number of competencies which were considered to be essential for the performance of each of nine activities are: sells direct to producer, 39; assists local dealers in promoting the use of specific feeds, 38; assists farmers in planning feeding programs, 37; assists local dealers in promotional campaigns and feed and grain clinics, 37; assists farmers to see through their own problems, 36; follows up on results obtained by customers and reports them to management, 36; sells to customer across the counter, 36; recognizes abnormal and detrimental practices and animal health conditions, 31; and solicits local dealers to sell company products, 27.

TABLE 1

Competency	Competency Frequency
Thoroughly understands his company's feed products	201
Understands importance of personal sales traits and a pleasing personality	185
Ability to greet customers and study their needs	185
Understands feeding practices and programs used in the community	184
Ability to classify and cope with different types of customers	182
Ability to use suggestive selling and to close the sale	179
Understands research findings of livestock (poultry) feeding trials	178
Ability to determine rations for specific livestock (poultry) uses	177
Understands composition of farm grains. roughages, and supplements	174
Understands other products sold by his business (company)	171
Understands various methods of preparing livestock (poultry) feeds, i.e., grinding, pelleting, etc.	168
Understands control of livestock (poultry) pests and parasites	165
Ability to determine the approximate amount of profit that is likely	165
Understands policies of his business (company)	164
Ability to determine the livestock (poultry) performance records to keep	162
Ability to identify common livestock (poultry) diseases	159
Knowledge of the feed products of competitors	158
Knowledge of feed mill operation	156
Ability to evaluate farmer's roughages, pasture, and grain resources	152
Ability to determine the repayment ability of the customer	152
Knowledge of the physical make-up and digestive process of farm animals (birds)	150
Ability to write up and interpret the feeding results of his customers and and convey them to management	149
Understands place of sanitation in the livestock (poultry) operation	148
Ability to determine with the customer the amount of credit needed	
Understands promotional techniques for increasing feed sales	
Ability to express feeding and nutrition information to groups	147
Understands factors to consider in selecting specific animals (birds)	145
Knowledge of livestock prices and price trends	
Knowledge of transportation and delivery procedures	
Understands influence of equipment upon growth and the rate of gain	144
Understands influence of housing upon the growth and the rate of gain	
Ability to fill out company invoices and sales contracts	136
Knowledge of the agricultural practices used in the community	130
Understands influence of heredity on the rate of gain	126
Ability to fit animals for show or sale	123
Understands problems of feed dealers in the community	122
Knowledge of marketing channels for livestock (poultry) and their products	118
Ability to determine the grade of the animals (birds)	109
Knowledge of the methods used in collecting bills	107
Understands criterian for appraising prospective feed dealers	89

---

[1] Adapted from Albracht, James J., "A Process for Determining Vocational Competencies for the Performance of Essential Activities for Sales Personnel in the Feed Industry, and the Loci at which the Competencies could be Taught." Michigan State University, 1966. This study was supported by a grant from the U.S. Office of Education, Contract No. OE-6-85-014, under provisions of section 4 (c), of the Vocational Act of 1963. Unpublished doctoral dissertation.

[2] Loci—The educational facilities where the sales competencies could be taught as indicated by time and place considerations.

[3] Clark, Raymond, *Vocational Competencies Needed by Workers in Non-Farm Agricultural Occupations.* E. Lansing, Mich., Michigan State University, June, 1964 (mimeo)

James J. Albracht

(Continued from page 118)

The jury of twenty four experts was also asked to indicate at which loci each of the competencies could be taught. The number of competencies which could be taught at each of the six loci were: dealer or company school, 40; on-the-job[4], 40; post high school, 33; adult, 32; four year college, 31; high school, 28.

Local Matter

Of the forty competencies, seven were considered to be specifically related to the particular feed company, and the jury members indicated that these seven competencies could only be taught at the "dealer" and the "on-the-job" loci. The seven competencies were: thoroughly understands his company's feed products; understands other products sold by his business (company); understands the policies of his business (company); knowledge of the feed products of competitors; ability to fill out company invoices and sales contracts; understands the problem of feed dealers in the community; and understands the criteria for appraising prospective feed dealers. Of the remaining thirty-three competencies the jury members considered that each of the competencies could be taught at the "post-high school" locus, and that twenty-eight of the thirty-three competencies could be taught at the "high school" locus.

Post-High School

The five competencies which were considered to be possible at the "post-high school" locus but not at the "high school" locus were: understands the research findings of livestock (poultry) feeding trials; ability to write up and interpret the feeding results of his customers and convey them to management; understands the promotional techniques for increasing feed sales; ability to express feeding and nutrition information to groups; and knowledge of the methods used in collecting bills.

Summary

The results of this study appear to indicate that the competencies identified as essential for the performance of the sales activities and the loci at which the competencies could be taught could be considered by those responsible for the development of curricula and courses of study for persons in or preparing to enter positions which require the performance of sales activities. For example, the person who is responsible for developing the courses of study for the high school program with the help of the local advisory committee could decide which of the nine sales activities could be used as a basis for the instruction. The curricula director, teacher and the advisory committee could further select the competencies to be included in the educational program from those which are essential for the performance of the selected activities, and which also could be taught at the "high school" locus.

---

[4] On-the-job—Any training given in the place of business exclusive of that given in cooperative occupational programs between the employer and an educational institution.

Earl McCollum

(Continued from page 116)

ment techniques, wildlife management, and veterinary medicine.

New and Expanding Fields

A new field for technicians is opened in landscaping and public grounds management. This curriculum includes general education and the basic agricultural courses plus tree and shrub identification, plant disease and insect problems, lawn and garden equipment use and maintenance, greenhouse and nursery management, landscaping and public grounds management, turf grass management, and park management and administration.

Another rapidly growing field as Americans gain more leisure time, is that of outdoor recreation. The technical offerings at Community Colleges include techniques of outdoor recreation, sports equipment repair, emergency care and rescue, recreation camp counseling, range and forest plants, earth science technology, and administration of recreation camps and parks.

Employment Opportunities in Agriculture

With the world/population/food ratio such as it is and the population growth of the world in an ever-expanding trend the general outlook for employment in agriculture is extremely good. This statement must be coupled with the admonition that the outlook for employment of unskilled persons in agriculture is extremely poor. This coincides with the realization that agriculture is extremely complex requiring skills and knowledge which were previously unnecessary.

More specifically in this country and in the technician occupations, job opportunities are rapidly opening. Technicians work on a team with engineers, scientists, supervisors, and skilled craftsmen, converting theories and ideas into products and processes—the technician is the pivot-man on this team.

Technicians participate in research and development. They assist in designing and perfecting machines, processes, materials, and service for our increasingly complex world of work. They consider why things work as well as how things work. They work with their minds as well as their hands. Technicians' jobs frequently require the ability to apply scientific principles and to solve designs, process or service problems. Other technical jobs demand extensive knowledge of laboratory equipment, procedures and techniques.

Technicians of this nature are needed in all types of agricultural service industries, fertilizers, chemicals, seed dealers, machinery and equipment companies. Food processing companies are utilizing technicians as field men, in laboratories, and on the quality control line. Governmental agencies are using technicians in a non-career capacity in soil conservation and range management. Highway departments and public agencies are using technicians in managing the landscaped areas utilized by the public.

Future Bright

These vast areas of opportunity have been expanding in the past few years and show no signs of decreasing in growth in the next few years. With this situation in mind the young man considering choices for a career can select from many avenues to travel in the world's most vital vocation Agriculture. One of the avenues for education in agriculture beyond the high school is the Community College.

VT 004 061

Work and Mental Disorder, A Study of Factors Involved in the Rehabilitation of the Vocationally Disadvantaged Former Mental Patient, Summary of Final Report.

Neff, Walter S. * Koltuv, Myron
Institute for the Crippled and Disabled, New York, N.Y.
Pub Date - May67
MF AVAILABLE IN VT-ERIC SET 8p.

*VOCATIONAL REHABILITATION, DEMONSTRATION PROJECTS, EXPERIMENTAL GROUPS, CONTROL GROUPS, VOCATIONAL EDUCATION, ANCILLARY SERVICES, *EMOTIONALLY DISTURBED,

"Work and Mental Disorder, A Study of Factors Involved in the Rehabilitation of the Vocationally Disadvantaged Mental Patient" is summarized. See abstract of VT 004 060 which is the complete study. (JK)

VT 004 061

ED022065

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

SUMMARY

WORK AND MENTAL DISORDER

A Study of Factors Involved in the Rehabilitation of the Vocationally Disadvantaged Former Mental Patient.

by

Walter S. Neff, Ph.D.
Professor of Psychology
New York University

and

Myron Koltuv, Ph.D.
Director of Research
Institute for the Crippled & Disabled

Summary of Final Report

May, 1967

D

This investigation was supported, in part, by a research and demonstration grant, number RD 990-p, from the Vocational Rehabilitation Administration, U. S. Department of Health, Education, and Welfare, Washington, D. C.

INSTITUTE FOR THE CRIPPLED AND DISABLED 400 FIRST AVENUE
NEW YORK CITY

~~VT004060~~
VT004061

Identification

The present document is a brief summary of the Final Report of a five year study of the rehabilitation of vocationally disadvantaged former mental patients. This Project was carried on at the Institute for the Crippled and Disabled of New York City (ICD), with the New York State Division of Vocational Rehabilitation (DVR) as a cooperating agency. Its chief source of support was the Vocational Rehabilitation Administration (VRA) of the United States Department of Health, Education, and Welfare. The formal starting date of the Project was July 1, 1962 and the Final Report was completed in May, 1967. The Project Director was Dr. Walter S. Neff, who was Professor of Psychology at New York University and Director of Research at ICD at the time that the study was launched. The Chief Investigator was Dr. Myron Koltuv who became Project Co-Director in 1964 and succeeded Dr. Neff as Director of Research at ICD.[1]

Objectives

The study had two major aspects, which were of equal importance. First, the Project involved the innovation of a coordinated network of services, which was designed to improve the employability of people who had been deemed relatively unemployable by reason of an emotional disorder. Second, the Project had a series of research aims, as follows:

(1) To study the degree to which a comprehensive rehabilitation center can assist the vocationally disadvantaged mental patient to procure and maintain gainful employment and remain in the community without rehospitalization.

(2) To study the characteristics of mental patients who benefit (or do not benefit) from the services of a comprehensive rehabilitation center.

(3) To formulate and test a series of hypotheses concerning the determinants of rehabilitation outcome.

(4) To study the criteria through which a state rehabilitation agency allocates mental patients to various rehabilitation services and programs.

---

[1] Dr. Neff continues as Professor of Psychology, New York University, and is currently Research Consultant to ICD. Dr. Koltuv is now Assistant Professor in the Division of Social and Community Psychiatry, the Albert Einstein College of Medicine.

Research Design

The study sample was made up of 236 former mental patients, who constituted a carefully designed set of samplings of persons with a history of emotional disorder who had applied to the New York State DVR for vocational assistance between 1962 and 1964. Precautions were taken to ensure that the hypotheses of the study could be adequately tested. The study sample was subdivided into four subgroups, as follows: (1) an Experimental Group (N = 111), who received the innovated network of services at ICD: (2) a Control Group (n = 40), which was generated by randomly rejecting one out of every three referred clients; (3) a Comparison Group (n = 63), which consisted of a random selection of clients referred by DVR to less intensive programs at commercial trade schools; (4) a Comparison Group (n = 40, of which only 22 could be found), who comprised persons who had applied to DVR but who broke off contact before a service plan could be implemented. All subjects were studied intensively in follow-up, covering a period of some 20 months after whatever services they received had been completed. Further divisions of the subgroups were made, to take account of such issues as duration of service and voluntary or involuntary termination of service.

A central feature of the study was an investigation of the relation of client characteristics to success or failure. This involved not only certain selected demographic variables, which could be studied in the entire sample, but also, as applied only to the Experimental Group, a set of standardized staff assessments and psychological tests.

The dependent variables of the study were of two kinds: "hard" and "soft". The "hard" criteria were based on empirically derived data concerning post-service employment and hospitalization. The "soft" criteria were derived from systematic assessment of the clients' personal and social adjustment during follow-up.

Techniques of multivariate analysis were used. Much of the data was factor-analyzed, both to study relationships among the many variables and to reduce their number to manageable proportions. Inferences were based on current applications of multiple regression analysis, which permits study both of the combined effects of sets of variables on a criterion and estimates of the unique influence of each of these variables. Multiple regression analysis also provided statistical control over systematic but undesired sources of variation, such as that arising from the influence of initial group differences on dependent variables of interest.

The Service Program

The core of the program provided to the experimental subjects at ICD was an intensive and graded series of vocational services, including both evaluation and training, designed to last from six months to one year. Supporting these vocational services, and considered as ancillary to them, was an almost equally intensive network of therapeutic services, including individual and group psychotherapy, informal supportive contacts, social groupwork, social casework, medical and remedial therapies where required, and a period of post-training counseling and psychotherapy during the first six months of follow-up. In detail, the vocational program consisted of an initial seven week vocational evaluation, which was organized both to apply increasing quanta of work pressures and to yield observational data on work deficits and work potentials. The evaluation phase was followed by an individually tailored type of vocational training, either in a sheltered workshop setting or in formal trade-training classes. The overall objective of the entire process was to facilitate vocational adjustment and, hopefully, to prevent rehospitalization.

The Target Population

It should be stressed that the study sample is not representative of mental patients in general, or of discharged mental patients in particular. In addition to certain minimal selection criteria required by the study design (e.g. an age range between 17 and 50, no complicating physical disability, a minimum of dull-normal intelligence), only a self-selected portion of discharged mental patients currently present themselves to a state rehabilitation agency for vocational service. The study sample was also influenced by the demographic characteristics of its base population (New York City) and by whatever subtle factors operate to permit a viable relationship between a given DVR counselor and a prospective client. While it is likely that the study sample is adequately representative of emotionally disabled clients served by such an agency as the New York City DVR, it is far from certain that our results can be generalized to all mental patients, or to discharged patients as a special grouping.

In the present study, 75% of the experimental and control subjects were males. The median age for the combined group was 27 and the median education was high school completion. Only 12% were married at the time of referral. About half the sample was Jewish, one third Catholic and the remainder Protestant. Twelve percent were Negro or Puerto Rican. Using the Hollingshead Index of Social Class, 70% belonged to classes III or IV. Although not characteristically the long-term, back-ward hospital patient, the typical client of the study was marked by a relatively chronic psychiatric impairment that had begun in early adolescence and had been diagnosed as schizophrenia. The median number of previous hospitalizations was two and the median length of in-hospital time was 22 months. Previous employment was generally quite spotty. One-fifth of the group had never worked, and the median percentage of time worked (as a proportion of total available time since school) was 30%. These gross statistics reveal that the study sample makes up a quite marginal sector of general population, with regard to the usual criteria of personal, social and vocational adjustment.

The Results

Only the most important results of the study will be presented in this Summary. They were as follows:

1. A vocationally oriented network of services to emotionally disabled clients in a comprehensive rehabilitation center, results in a statistically significant increase in their subsequent employability, as compared to a group of control clients who were served in less intensive ways. The magnitude of the difference between the groups, however, was quite moderate.

2. In contrast, the described program had no observable effects either on rehospitalization or on personal and social adjustment during the follow-up period.

3. Certain personal characteristics of the clients, particularly age, previous employment, and the DVR counselor's judgement of the client's potential, had stronger relationships with employment outcome than program impact, *per se*. In general, clients who were younger, who had some history of previous employment, and who were judged by their DVR counselors to have better potential for employment, tended to have more favorable employment outcomes.

4. Clients referred by DVR directly to commercial trade schools differed in a number of respects from clients referred to the comprehensive rehabilitation center. The former tended more often to be female, to be characterized by minority group status and lower socio-economic levels, had less previous hospitalization and better work-histories. Nevertheless, there is no evidence that either group attained a higher degree of rehabilitation success, on any of the outcome criteria of the study.

5. An important finding within the experimental group, is that the greater the supply of supportive services, the more positive the outcomes. Clients who received some form of psychotherapy or intensive casework service, who were in the program for longer periods, who completed their assigned programs and who had a larger number of staff contacts, tended to do better in post-service employment and were hospitalized less.

6. Within the experimental group, the more successful client was initially judged to be more self-deprecatory, less impulse-ridden, less egocentric, less immature, less timid and more strongly motivated for work than their less successful counterparts. While it was thus possible to distinguish the more successful from the less successful client on the basis of initial, global staff assessments, an extensive series of psychometric tests proved generally to be unrelated to the outcome criteria of the study.

7. A final, overall result is that employment in the unprotected, open labor market remains a very serious problem for the former mental patients who made up the study sample. Even after approximately a year of intensive vocational and therapeutic service, only about one-fifth of the experimental group managed to achieve stable and continuous employment during the follow-up period and almost one-quarter were unable to work at all.

Conclusions and Recommendations

1. For at least a considerable proportion of discharged mental patients, vocational rehabilitation will not be effective unless it is accompanied by, and integrated with, a substantial network of supportive and therapeutic services.

2. The devised mix of vocational and therapeutic services has a significant, if modest, influence on future employability, but none on rehospitalization. Within the limits of the variables studied, these two rehabilitation outcomes appear to be independently determined.

3. For that sector of the population which made up the study sample, the standard psychometric tests are inefficient predictors of criterion outcome. On the other hand, certain demographic factors (e.g., age, previous employment, previous hospitalization) and certain global staff assessments (e.g. impulsivity, immaturity, egocentrism) show promise as predictors of vocational success.

4. The desired rehabilitation outcomes-- stable work and freedom from rehospitalization-- require much more flexible social arrangements than are currently available. If the discharged mental patient is to avoid the negative consequences of enforced idleness and recommitment, our society will have to invest a much larger share of its resources in various forms of sheltered and semi-sheltered employment and in many more varieties of partial institutionalization than now exist.

VT 004 063
The Remotivation of Chronic Schizophrenic Men Patients, Abstract, Final Report.

Hawaii State Hospital, Kaneohe.
Pub Date - 66
MF AVAILABLE IN VT-ERIC SET 7p.

*VOCATIONAL REHABILITATION, *EMOTIONALLY DISTURBED, MALES, *WORK EXPERIENCE, SCHIZOPHRENIA, *PSYCHIATRIC HOSPITALS, EXPERIMENTAL GROUPS, CONTROL GROUPS, COMPARATIVE ANALYSIS, VOCATIONAL ADJUSTMENT, EMPLOYMENT, FOLLOWUP STUDIES,

"The Remotivation of Chronic Schizophrenic Men Patients" is summarized. See abstract of VT 004 062 which is the complete study. (JK)

VT 004 063

Summary

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Hawaii State Hospital, Kaneohe.
Dept. of Health, Mental Health Div.

ED022065

Vocational Rehabilitation Administration
Abstract--Final Report Project Number 891

1966

THE REMOTIVATION OF CHRONIC SCHIZOPHRENIC MEN PATIENTS

A major difficulty for men patients on "continuous treatment wards" of a state hospital is that they have either lost or have never acquired the ability to tolerate a work situation outside of the hospital. The lack of information for the employer to hire with some prior work history is another difficulty. Also, the authors suspected that the high rate of readmissions to the hospital was attributed to the difficulty of independently facing the dual condition of adjustment to community living and earning a wage.

To meet the problem, a VRA demonstration project was approved to develop within the hospital a program to evaluate work functioning and to develop worker competence while not subject to the pressures of a competitive job situation in the community.

The project was designed to meet three goals:

a. To establish within Hawaii State Hospital vocational assessment procedures;

b. To provide a program of work conditioning designed to increase work potential in patients identified as chronic schizophrenics;

c. To provide adequate aftercare service and follow up, including job placement, training, and assistance in making community adjustment.

The emphasis of the project was to provide a systematic work conditioning procedure in recognition of the needs of the long hospitalized mental patients, which is related to the program of the Vocational Adjustment Center in Chicago. This program defined those aspects of gainful employment which involved a "process of adjustment," and centered its efforts around the individual and his ability to relate his own feelings, attitudes, and aspirations to his co-workers and supervisor. The findings of the vocational adjustment center study in a sheltered workshop setting were adapted for use with chronic schizophrenic patients in a hospital setting at Hawaii State Hospital. A significant difference of the Hawaii State Hospital project was in the adaptation and use of existing hospital work settings as well as the orientation and training work supervisors to provide work conditioning.

VT004063

The major hypothesis to be tested was that patients who were given a program of work conditioning were more likely to be placed in work situations in the community and to remain longer outside of the hospital when compared to a matched control group. In addition, information was gathered on patients to facilitate their job placement. To test the effects of the work conditioning program, two groups of patients were selected: an experimental group exposed to a work conditioning program and a control group which received the same services as the experimental group, except the work conditioning.

To provide a baseline on which to compare patients, each patient was put through an initial period of assessment. The subjects were matched patient to patient on the basis of age, intelligence, length of hospitalization, and level of work tolerance scores. Following the matching, patients were assigned at random to either the experimental or control group.

Each patient was assessed on two general measures. The first was Level of Work Tolerance (LWT). Jobs in the hospital had been categorized empirically into four levels of difficulty. Each patient was evaluated as to the level at which he could work best by giving him an opportunity to perform on selected jobs in four work areas. Patients were rated in terms of learning, retention, quality, and quantity of work. The average rating on the job assignments attempted was considered to be the LWT score.

The second measure was Level of Congruence to an Adequate Vocational Personality (LCAVP). To determine his LCAVP, each patient was rated by at least two raters who had no previous contact with the patient. Each patient was rated by a team of raters in the following areas: reaction to supervision, relations with co-workers, work satisfaction, work pressures, and use of abilities. The patient's average rating in each of the five rating areas by the two or more raters was taken as his score.

Following the Vocational Personality rating, raters met as a group and placed each of the patients in one of the following eight categories:

1. Ready for placement on a regular, full-time job in the community.
2. Ready for placement on a regular, part-time job in the community.
3. Ready for on-the-job training.
4. Ready for vocational training.
5. Ready for placement in a sheltered workshop.
6. Ready for sheltered workshop training.
7. Continue in hospital work activity program.
8. Not ready for placement.

The purpose of placement prediction was to aid in planning vocational placement.

The experimental group was given a six-month period of work conditioning on selected jobs in the four work areas, while the control group was continued on regular pre-assessment work assignments. At the end of the six-month period, both the experimental and the control group were given a second assessment period. The IWT and LCAVP were determined, after which all raters met and predictions for placement were made again. Scores were compared to determine if there was any differential gain by either the experimental or the control group.

The patients were placed in appropriate settings in the community according to team's prediction. All patients, both experimental and control, were provided with the services of the project vocational counselor in addition to the usual after-care services. Nine months following post-assessment, patients were reviewed to determine the number of experimentals and controls working outside of the hospital. Community agencies did not know who was experimental or control, but the information obtained on the post-assessment was shared with community agencies.

Work conditioning for this project was centered around five areas of work behavior: reaction to supervision, relations with co-workers, work satisfaction, work pressures, and the use of abilities. The conditioning was provided through work supervisors (regular hospital employees) using a performance record.

At the lower levels of work tolerance, the work supervisor noted patient's improved performance and immediately gave the patient credit. As the patient progressed through the work tolerance levels, the conditioning became more realistic. Another aspect of work conditioning had to do with negative pressures and anxieties of work, as well as evaluations of performance, which were brought to the patient's attention and he was shown how such evaluation was necessary and temporary. He was helped to react in an appropriate manner.

The typical client who left the hospital was 41 years old, had been in the hospital fourteen years and had an I.Q. of 79. He also had the following general characteristics: lack of ability to make an appropriate independent decision, use of judgment and initiative, physical slowness, inability to express thoughts freely and clearly, and was generally asocial.

Table I provides data on the results of the project clients over an eighteen-month period involving work conditioning, rehabilitation services and follow up.

First Hypothesis:

Clients who aregiven a program of work conditioning and vocational rehabilitation services or vocational rehabilitation services alone are more likely to be placed in community jobs than members of the matched control group, who do not engage in work conditioning or receive vocational rehabilitation services.

Statistical data indicated only clients of the rehabilitation project found employment in the community. These findings supported the first hypothesis, but the difference was significant only between the vocational services alone group and the regular hospital program group.

The return rate for non-project group was 50% and only 19% for the project clients. Also, at the end of the follow-up period only 16% of the non-project members remained out of the hospital, but 24% of the project clients remained out of the hospital.

One of the more significant findings of the project was the return rate for the Vocational Rehabilitation Services group which was 14%, but went up to 19% for the group of clients that received both Work Conditioning and Vocational Rehabilitation Services. This finding did not support the first hypothesis, but was in the opposite direction. Work conditioning per se may be a negative factor in the speedy discharge of the chronic schizophrenic patient.

Second Hypothesis:

The second hypothesis states that clients who are provided vocational rehabilitation and follow-up services are more likely to be placed in work situations in the community and can remain longer outside of the hospital than clients in a matched control group.

Results indicate only partial acceptance, since clients who are given a program of vocational rehabilitation services alone are more likely to be employed in the community than clients who receive the regular hospital Industrial Therapy Program. Moreover, clients who receive vocational rehabilitation services alone have a significantly lower return rate than clients in the regular hospital program.

Third Hypothesis:

The third hypothesis states that there will be a significant increase in the measure of work performance (LMP) for clients in a program of work conditioning and vocational rehabilitation services with follow up compared to clients in a program of only vocational rehabilitation services with follow up.

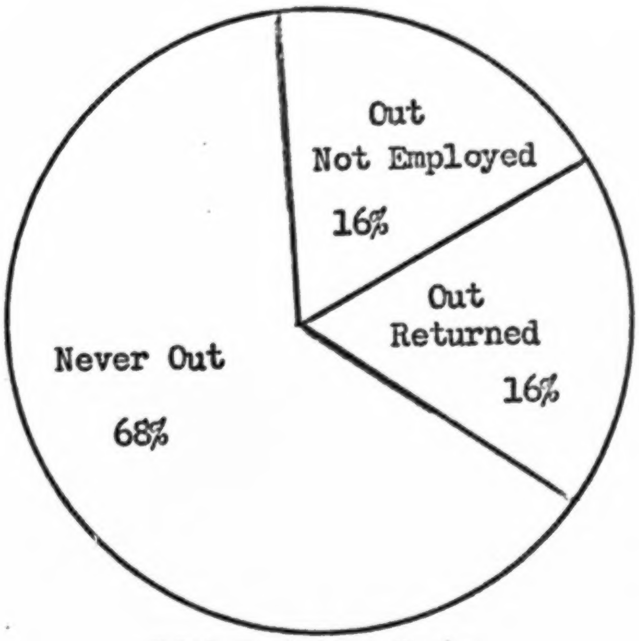
Results from the study do not support this hypothesis and therefore it is not accepted.

Fourth Hypothesis:

The fourth hypothesis states that there will be a significant increase in the measure of work behavior (LCWP) for clients in a program of work conditioning and vocational rehabilitation services with follow up compared with a matched group of clients who receive only vocational rehabilitation services and follow up.

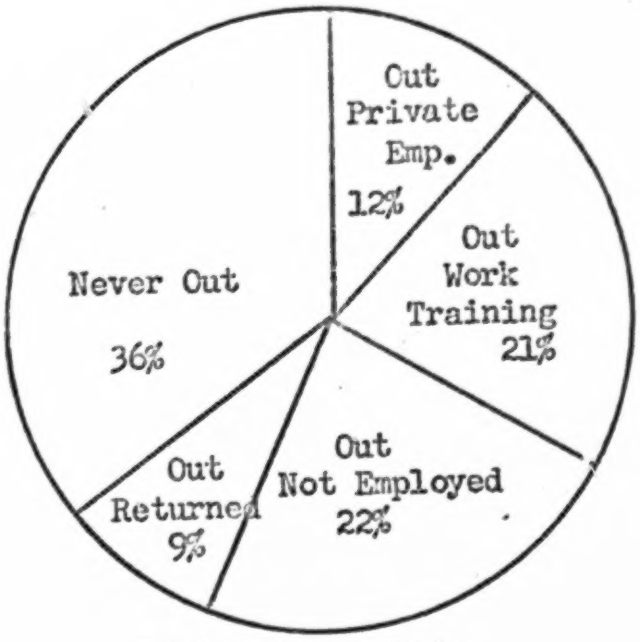
Table I VRA REHABILITATION PROJECT AT FOLLOW UP*

REGULAR HOSPITAL PROGRAM
N-19



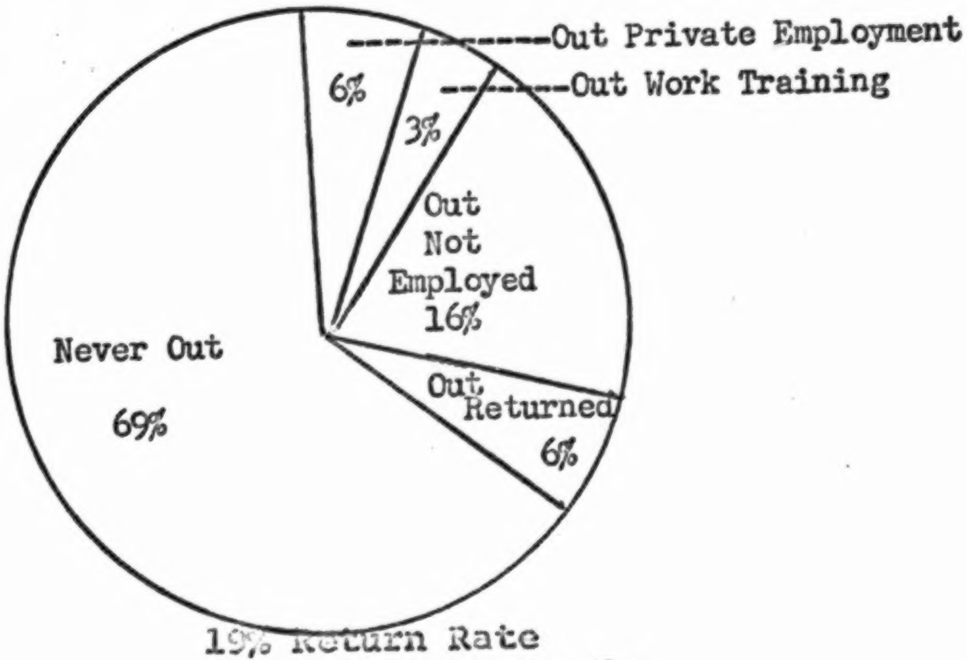
50% Return Rate
16% Out at 18 Months

VOCATIONAL REHABILITATION
SERVICES & FOLLOW UP
N-33



14% Return Rate
55% Out at 18 Months

VOCATIONAL
REHABILITATION SERVICES AND
WORK CONDITIONING
N-32



19% Return Rate
24% Out at 18 Months

*At 18 months for original group
At 12 months for repeat group

VT 004 486

Requirements for Approval of Educational Programs for Dental Assistants.

American Dental Assn., Chicago, Ill. Counc. on Dent. Educ.
Pub Date - Oct60
MF AVAILABLE IN VT-ERIC SET 6p.

*ACCREDITATION (INSTITUTIONS), *STANDARDS, *DENTAL ASSISTANTS, *HEALTH OCCUPATIONS EDUCATION, DENTAL ASSOCIATIONS, PROGRAM DEVELOPMENT,

The standards outlined are intended for use by schools in planning courses, by dentists in reviewing functions and duties of assistants, and by the Council in accrediting programs. A statement from the "Bylaws" of the American Dental Association lists the duties of the Council. Program requirements are presented for length, administering institution, physical facilities, student admission, graduation and certification, library, financial support, curriculum, and instruction. The Council accreditation policy is included. This document is available from Council on Dental Education, American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611. (JK)

VT 004 486

ED022065

COUNCIL ON DENTAL EDUCATION
American Dental Association

REQUIREMENTS FOR APPROVAL OF EDUCATIONAL PROGRAMS FOR DENTAL ASSISTANTS*

Purpose of Requirements: The purpose of these Requirements is to provide an outline of a program which will be effective in providing education needed by a dental assistant. The character and quantity of the educational program are planned with the realization that the duties of a dental assistant are adjunctive to the dental profession. The function and the responsibilities of the dental assistant are defined in these Requirements.

These educational standards have been developed by the Council on Dental Education of the American Dental Association for use as a guide by schools planning courses of instruction. These standards may also be used by the profession in reviewing specific functions and duties which may be performed by a dental assistant. In creating these standards, the Council, through conferences with the American Dental Assistants Association, reached the conclusion that educational requirements should provide criteria for evaluating educational programs. These programs will provide education and experience needed by a dental assistant employed by a dentist in any area of dental practice.

Authorization of Responsibility: The Bylaws of the American Dental Association (Chapter IX, Section 110B) state: "The duties of the Council (on Dental Education) shall be: (a) To act as the agency of the Association in the investigation of dental education and associated subjects; (b) To accredit on behalf of this Association dental schools and schools in related fields of dental education in accordance with requirements and standards approved by the House of Delegates; (c) To approve on behalf of this Association internships and residencies in accordance with requirements and standards approved by the House of Delegates; (d) To study and make recommendations on (1) the recognition of special areas of dental practice; (2) the approval or disapproval of national certifying boards for special areas of dental practice; (3) the educational and administrative standards of the certifying boards; and to act on behalf of this Association in maintaining effective liaison with the certifying boards and related special groups.

The Council on Dental Education has been concerned with the establishment of educational standards for the education of dental assistants, and it is important that these standards continue to be the responsibility of the dental profession. It is also

---

*Approved by the House of Delegates, American Dental Association. at the Los Angeles Annual Session, October, 1960.

VT004486

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FRO
PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR
STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUC
POSITION OR POLICY.

important that the institutions which educate dental assistants come under the purview of the Association's accrediting agency; namely, the Council on Dental Education.

Educational Program: It is intended that the program provide the student-dental assistant with educational experiences to make her competent in all phases of office management, office laboratory procedures and chairside dental assisting.

Programs will be accredited if they meet the requirements of the Council on Dental Education which have been established by the American Dental Association.

THE FORMAL PROGRAM

Length of Program: The program must be at least one academic year in length, i.e., approximately nine months.

Institution: The program of basic instruction may be placed under the organization and administration of a dental school, may be operated by a dental school as a separate division under separate administration or may be conducted as an integral part of a separate educational agency. In all instances, the program must be operated on a non-profit basis.

Physical Facilities: The physical plant and facilities will be evaluated on the basis of adequacy to provide space, equipment and environment for effective administration of the program and effective conduct of courses which are a part of the program. It is expected that institutions will provide adequate space for offices and for research of faculty members.

Admission of Students: Students admitted to the program must have a high school diploma or equivalent education.

Promotion and Graduation: Students satisfactorily completing the one-year program may be given a document granted by the sponsoring institution. This document should stipulate dates of attendance.

It is emphasized that granting the completion document does not signify "certification", i.e. that the graduate is a "Certified Dental Assistant" a title of accomplishment conferred by the Certifying Board of the American Dental Assistants Association operating under the Requirements approved by the American Dental Association.

Library: It is expected that students enrolled in the program will have a library available for their use containing textbooks, reference materials and other instructional aids. Library facilities should also include materials useful to the teaching staff and to persons engaged in educational research.

Financial Support: Financial management and support will be evaluated on the basis that each program meets acceptable educational objectives. Adequacy of the operating budgets will be demonstrated by the character and quality of physical facilities, equipment, faculty, library, teaching methods and curriculum. Only with adequate financial support and properly allocated expenditures will educational programs meet educational standards included in these Requirements.

It is again emphasized that institutions and programs must not be operated on a proprietary basis. While it is feasible, through high tuition fees and other remunerative projects, to develop self-supporting or profit-making programs, these Requirements stipulate that a program must be conducted only for the benefit of the students and must meet the aims and objectives of the profession.

Financial support of the programs will also be evaluated to determine if parent institutions and administrators have planned establishment and operation of programs to guarantee continuance of operations for a reasonable period of time.

Curriculum: The course of study should be one academic year in length, i.e., about nine months. These Requirements do not specify number of clock hours or number of credits for each course. It is expected that institutions will plan a curriculum which will be balanced to meet the aims and objectives of the program. Also, these Requirements do not specify names of the courses, but stipulate only areas of instruction which must be included in the curriculum.

Areas of Instruction: The following areas of instruction, concepts or topics must be included in the curriculum:

A. Preclinical Sciences: (Orientation and background information)

Knowledge of:

1. History, organization and code of ethics of American Dental Assocation and American Dental Assistants Association.

2. Certification and state practice acts as applied to assistant.

3. Sterilization and its application to materials and instruments.

4. Medication, including anesthetics, and legal implications as applied to dentistry.

5. Tooth form, function and relationships.

6. Diet and nutrition; its application to dental health and disease.

7. Principal causes of oral inflammation, degeneration and dental caries.

8. Application of first aid procedures.

9. Principles of transmittal of common diseases.

10. Basic principles of English composition and speech, and the ability to type business letters.

B. Clinical Sciences: (Office, chairside and laboratory procedures)

1. Knowledge and ability to assist the dentist in any routing operative or office procedure.

2. Knowledge and ability to identify and prepare materials, instruments and equipment for any routine dental procedures.

3. Knowledge and ability to use the x-ray machine, take x-rays, develop and mount films.

4. Knowledge and ability to manage office routines related to patient appointments, records, payment of fees and bookkeeping.

5. Knowledge of supplies, their uses, purchase and storage.

6. Knowledge and ability to care for equipment and instruments.

7. Knowledge of personal hygiene and grooming.

8. Knowledge and ability in use and application of gypsum products and the preparation and trimming of casts or dies.

9. Knowledge and ability to invest, cast and polish an inlay or crown casting.

10. Ability to adapt base plates and wax rims on casts.

11. Knowledge of golds, alloys and waxes and their application.

12. Knowledge of commercial laboratories and preparation of cases to be sent for laboratory processing.

C. Instruction: Adequacy of instruction will be measured, in part, by availability of teaching aids, use of lecture-demonstration methods, individual laboratory methods, student-to-teacher ratios and upon the instructors' ability to inspire students to attain knowledge and high ethical principles within the objectives of the program.

Instruction will also be evaluated upon general impressions and concepts given students by the faculty regarding dental health and the role of members of the dental health team in meeting the aims of the profession. Special attention will be given to the effectiveness of courses in ethics, jurisprudence and professional relations and also to the students' impression of the faculty.

The dental assistant program will not be considered a degree program and, in most instances, will be offered at a vocational level. However, it is expected that dental schools which sponsor dental assistant programs will offer them at a level consistent with university policy.

D. Use of Additional Educational Facilities: It is necessary that students in dental assisting programs be familiar with dental offices, office procedures and office laboratory procedures. It also is expected that dental assistant programs will provide instruction in commercial laboratory procedures and will have equipment comparable to that found in modern commercial dental laboratories. It is desirable that students be given instruction and experience in a dental office or dental clinic.

General Policy on Accreditation: It is the policy of the Council on Dental Education to accredit programs for training dental assistants, providing that administrators responsible for the program indicate a desire for evaluation. Institutions requesting evaluation must provide the Council with periodic reports and data pertinent to formal evaluation of the educational program. The Council will then send visiting committees to the institution as necessary and desirable. The Council will provide a list of accredited programs and will indicate that each is "fully approved" or "provisionally approved". Programs which do not meet these Requirements will not be listed by the Council.

Programs will not be evaluated for accreditation until they are in operation; i.e., no program existing as a "plan" or a "proposal" will be eligible for accreditation. The Council will assist administrators in planning new programs and, with this knowledge, the Council will be able also to provide administrators with informal indication regarding possible future accreditation of the program.

VT 004 696
Advisory Committees, "Selection and Use".

Ohio State Dept. of Education, Columbus
Distributive Education Operations Manual, no. 3
Ohio State Univ., Columbus
Bowling Green State Univ., Ohio
Pub Date - Feb66
MF AVAILABLE IN VT-ERIC SET. 39p.

*DISTRIBUTIVE EDUCATION, *ADVISORY COMMITTEES, *GUIDELINES, PROGRAM EVALUATION, PROGRAM DEVELOPMENT,

The purpose of this manual is to provide a model to assist the coordinator in establishing and utilizing an advisory committee in the local community. It was developed by 36 coordinators at the 1965 Ohio Distributive Education Workshop at The Ohio State University. Information covers (1) types of advisory committees--general advisory, specific advisory, post-secondary, and adult education committees, (2) committee composition--number of members, qualifications, and representation of community resources, (3) organization of the committee--approval and invitation, committee structure, length of service, and steering committee, (4) committee meetings--agendas and time and place, (5) role and function of advisory committee--objectives, public relations, student standards and recruitment, student selection, standards of evaluation, manpower needs and training facilities surveys, student problems, promotion of Distributive Education Clubs of America activities, standards of training stations, program facilities and aids, curriculum development, legislation, and development of distribution as a career, and (6) evaluation of the program and the advisory committee. A bibliography and a list of distributive education programs in Ohio are included. This document is available for $1.00 from Distributive Education Materials Laboratory, The Ohio State University, 124 West 17th Avenue, Columbus, Ohio 43210. (MM)

VT 004 696

D.E. MANUAL #3

ADVISORY COMMITTEES

VT004696 ED022065

STATE DEPARTMENT OF EDUCATION

in cooperation with

- OHIO STATE UNIVERSITY
- BOWLING GREEN STATE UNIVERSITY
- KENT STATE UNIVERSITY

DISTRIBUTIVE EDUCATION
OPERATIONS MANUAL NO. 3

ADVISORY COMMITTEES
"SELECTION AND USE"

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Ohio State Department of Education
in cooperation with

OHIO STATE UNIVERSITY
BOWLING GREEN STATE UNIVERSITY
KENT STATE UNIVERSITY

February 1966

TABLE OF CONTENTS

PREFACE iv

MEMBERS OF THE COMMITTEE. v

FOREWORD vii

INTRODUCTION 1

Educational Goals
Support for the Coordinator

TYPES OF ADVISORY COMMITTEES 4

General Advisory Committees
Specific Advisory Committees
Post-Secondary Committees
Adult Education Committees

COMMITTEE COMPOSITION 6

Number of Members
Qualifications for Membership
Representation of Community Resources

ORGANIZATION OF COMMITTEE. 7

Approval and Invitation
Committee Structure
Length of Service
Steering Committee

COMMITTEE MEETINGS. 11

Agendas
Time and Place of Meetings

MEMORANDUM

TO: The ERIC Clearinghouse on Vocational and Technical Education
The Ohio State University
980 Kinnear Road
Columbus, Ohio 43212

FROM: (Person) Thomas A. Hephner (Agency) Ohio Department of Education Distributive Education Materials Laboratory

(Address) 121 Lord Hall, Ohio State University

DATE: January 15, 1968

RE: (Author, Title, Publisher, Date) -----------, "Advisory Committees," Ohio Distributive Education Materials Laboratory, 1965

Supplementary Information on Instructional Material

Provide information below which is not included in the publication. Mark N/A in each blank for which information is not available or not applicable. Mark P when information is included in the publication. See reverse side for further instructions.

(1) Source of Available Copies:
Agency Distributive Education Materials Lab
Address 121 Lord Hall, Ohio State University, Columbus, Ohio 43210
Limitation on Available Copies None Price/Unit $1.00
(quantity prices) None

(2) Means Used to Develop Material:
Development Group Developmental Committee of D.E. Coordinators
Level of Group Distributive Education Coordinators in the State of Ohio
Method of Design, Testing, and Trial Drawn through a collaboration of coordinator experiences

(3) Utilization of Material:
Appropriate School Setting High School and Area Vocational Schools
Type of Program Could apply to all vocational work-study programs
Occupational Focus None
Geographic Adaptability Unlimited
Uses of Material To be used in cooperation with business community
Users of Material Teacher coordinators of Distributive Education

(4) Requirements for Using Material:
Teacher Competency Distributive Education Teacher-Coordinators
Student Selection Criteria N/A

Time Allotment N/A

Supplemental Media --
Necessary N/A)
Desirable) (Check Which)

Describe N/A

Source (agency)
(address)

ADVISORY COMMITTEE ROLE AND FUNCTION 14

Committee Objectives
Public Relations
Student Standards and Recruitment
Student Selection
Standards of Evaluation
Manpower Needs and Training Facilities Surveys
Student's Problems
Promotion of DECA Activities
Standards of Training Stations
Program Facilities and Aids
Curriculum Development
Legislation
Development of Distribution as a Career

EVALUATION. 22

Evaluation of Program
Evaluation of Advisory Committee

BIBLIOGRAPHY 24

DISTRIBUTIVE EDUCATION RROGRAMS IN OHIO 1965-66 26

Appreciation is expressed to George H. Frack, General Chairman of the 1965 Distributive Education Workshop; Dr. William B. Logan, General Chairman of the Committee on Selection and Use of Advisory and Occupational Committees; the chairmen of each of the five working committees; and to each of the members who conceived and wrote the original manuscript. The names of the members of the 1965 Workshop Committee on Selection and Use of Advisory Committees are shown on the following page. The original manuscript was revised and reorganized into its present form by Howard O. Merriman, project writer and distributive education instructor-coordinator, Columbus, Ohio Public Schools under the direction of Dr. William B. Logan, project director and director of Distributive Education Institutes, The Ohio State University.

Bernard C. Nye, State Supervisor
Distributive Education

For sale by the Distributive Education Materials Laboratory, The Ohio State University, 124 West 17th Avenue, Columbus, Ohio, 43210. Price $1.00, postpaid.

Teacher-Coordinators
Members of the Committee on the Selection and Use of Advisory and Occupational Committees

The Ohio State University, 1965

Charles E. Beard Jr.,	Springfield South High School
Don Biehl,	Mantua, Crestwood Local High School
William Bishop,	Wooster High School
J. E. Bradfield,	Lebanon High School
Marilyn Brandel,	Amelia, West Clermont High School
Ron Calabria,	Parma, Valley Forge High School
R. W. Corless,	Germantown, Valley View High School
Marian Darby,	Columbus, East High School
Richard DiScipio,	Cleveland, James Rhodes High School
Arnold T. Dobbs,	Cincinnati, Princeton High School
Pat Dunnigan, (Student)	Bowling Green State University
Nelson Garden,	Mentor High School
Kenneth Green,	Defiance High School
James L. Henry,	Penta County Joint Vocational School
Thomas Hephner,	Ravenna High School
James Huffman,	Mason High School
Gerald Jones,	Marietta High School
William Kramer,	Norwalk High School
Gordon Lemmon,	Miami Trace High School
Herbert Lust,	Cincinnati, Western Hills High School
Joseph Mascio,	Cuyahoga Falls High School
Barbara Massa,	St. Marys City High School
Jewett Montgomery,	Fredericktown High School
Dennis Murphy,	Akron, Kenmore High School
Jean Potts,	Mt. Vernon High School
Edgar Robinson,	Alliance High School
O. K. Rogers,	Reynoldsburg High School
William B. Ruth,	Whitehall-Yearling High School
Charles Salie,	Cincinnati, Withrow High School
Preston Scott,	Dayton, Patterson Vocational High School
Thomas Sheskey,	Marion, Harding High School
Margaret Spicer,	Springfield, North High School

J. J. Thoms,	Mansfield, Senior High School
James Walters,	Newark High School
C. Lee Weddell,	Vandalia, Butler City High School
Beverly Weiss,	Grove City High School

FOREWORD

The inherent value of the advisory committee in the promotion and development of vocational education has been apparent since the passage of initial vocational education legislation in 1917 (Smith-Hughes Act). The use of the advisory committee is widespread in areas of educational endeavor and its value to the vocational education program has been exemplified in many ways.

The United States Office of Education has given encouragement to the use of advisory committees in the development and operation of vocational education programs. A bulletin issued in 1941 set forth a paradigm for the organization and utilization of advisory committees. (10) In a speech before the American Vocational Association in 1953, Helen Moon delineated the advisory committee and its functions in a specific area (i.e., curriculum), illustrating a meaningful demonstration of the use of advisory committees. (7) Barlow, in the 1965 Yearbook of the National Society for the Study of Education, states that "community involvement in advisory committees and in many other ways is necessary in the future program. National, state and local labor-force needs must be reflected in the 'going' vocational program of the school. Representatives of specific occupational groups--labor, employees, and employers,--can and should provide advisory services." (1)

The value of advisory committees on the state and local level has been recognized since the inception of the distributive education program in Ohio in 1939. However, the growing complexity and the future development of distributive education in the State on the secondary school, post-secondary and adult education program levels necessitates an even greater emphasis on the use of local advisory committees. The recognition of this need resulted in this topic becoming one of four at the 1965 Ohio Distributive Education Workshop at The Ohio State University.

During the planning stages of the Workshop, an article appeared in the American Vocational Journal reporting a study in progress of local industry--education advisory committees. (2) Material was received for use at the workshop, and this report will be made available to the Director of the Project, Dr. Samuel

M. Burt, for his use in the Local Advisory Committee Study.

Thirty-six distributive education coordinators composed the workshop committee to develop the information presented in this manual, based on actual experience in working with advisory committees.

This manual will provide a model to assist a coordinator in establishing and utilizing an advisory committee in the local community.

The Ohio State University and the State Department of Education commend the use of advisory committees to local school systems as an integral part of the distributive education program. Many benefits will accrue to the school, the coordinator, the business community, and to the student.

E. E. Holt, State Superintendent
Public Instruction
State Of Ohio

Novice G. Fawcett, President
The Ohio State University

Byrl R. Shoemaker, Director
Vocational Education
State Department of Education
State of Ohio

Donald P. Cottrell, Dean
College of Education
The Ohio State University

Columbus, Ohio
February 1, 1966

INTRODUCTION

Every instructor-coordinator of distributive education in the State has available to him many resources of information and help in developing an effective program for the student and for the community. The coordinator does not need to attempt to do the job without outside help. He has available the knowledge, assistance, and resources of the businessmen in the community. They, too, are interested in the welfare of the program, and can give valuable and vital assistance to him throughout the year.

Educational Goals -- The need to determine and solve community problems is not solely delegated to our educational institutions. Rather, education, particularly vocational education, has as its purpose the filling of needs of the local communities. An advisory committee, composed as it is of representatives of the community; including business, organizations and other interested parties, can provide a means of determining not only the need for distributive education, but the direction which such a program should take. Such a committee can also provide a channel through which the educational institutions can communicate their needs and abilities to the general public and specific organizations, businesses and individuals. Such a committee can become a focal point for the community and its school for both vocational skills and academic needs.

The instructor-coordinator must keep constantly before the committee the major purpose of their formation, that of the growth and development of distributive education and the distributive education students. The work of the advisory committee is outlined in an acrostic shown in Figure 1, page 3.

Support for the Coordinator -- The instructor-coordinator of the in-school program is continually barraged by the need for training stations, student recruiting and selection, curriculum development, resource materials and speakers, and many other demands and decisions. All of these needs are reflected in the programs of study and training of the distributive education student. The advisory committee can become an effective instrument to assist the coordinator in the development and promotion of the distributive education program. The advisory committee can act as "sounding board" and "springboard" for ideas and projects; as initiator and evaluator of programs and products; and as implementor and provider of resources and materials.

The secondary school advisory committee can be utilized to advantage with adult distributive education programs. The committee, in its overall publicity campaign, can promote the adult programs. Planning and organizing the adult programs can be accomplished by the committee, recognizing the specific needs of the community. Each community has occupational characteristics and manpower needs which might be discovered through a survey to determine specific needs, resulting in the development of a course of study. The group to be served would be adults, unemployed or at work, who need training or retraining to develop saleable skills, to become employable or to advance on the job. An advisory committee for the adult program can be a sounding board as well as a rudder to assist the coordinator in a determination of course offerings, sources of instructors, and the myriad of problems which will confront him as he develops the adult program.

There are numerous ways in which the advisory committee can give strength and direction to the program. These ways will be explained in the pages which follow.

WORK OF THE ADVISORY COMMITTEE

A ssists in forming policies, making job analyses, selecting teachers

D evelops materials

V italizes the entire program

I nforms the supervisor about prospective teachers

S ells the program

O rganizes new phases of the program

R ecommends new ideas

Y ardstick of success

said simply, thus, it is a:

C ounselling

O rganization of

M embers

M ainly

I nterested in

T otal

T raining for every

E xecutive and

E mployee

Fig. 1.--An acrostic developed by William B. Logan for use in an address before the National Retail Merchants Association, New York City.

TYPES OF ADVISORY COMMITTEES

Distributive education instructor-coordinators should be familiar with the goals and purposes of advisory committees at all levels. The national and state level advisory committees assist and guide the appropriate DECA organization's activities in leadership, scholarship and social opportunities. Local advisory committees are groups of interested businessmen, civic leaders and individuals concerned with the promotion, organization and operation of distributive education programs in a community. The Vocational Education Act of 1963 defines the advisory committee as: "A committee appointed to assist in the development of a local distributive education program, which also acts in a consultative capacity, and is responsible for making recommendations and suggestions to school authorities who are empowered to act upon the advice offered." (12)

General Advisory Committees -- The general advisory committee is organized to deal with broad aspects of training in a community. The members serve as consultants and advisors to the instructor-coordinator, suggesting possible curriculum and activities that will meet the needs of the students as they work in the business community and to prepare them for a career in distribution. Possible sources for advisory committee members are: commercial and industrial leaders; civic, social, and professional leaders; churches; police and fire department personnel; educational leaders; labor union representatives; minority group leaders; service clubs; publishers, and many others.

The general advisory committee should always be, in the words of Kenneth B. Haas " . . . a representative cross-section of the interest of the community . . . so that any misinterpretations, misunderstandings, and jealousies that might otherwise arise may be avoided. No person should be selected for the group who cannot or will not co-operate in carrying on the program." (5-p. 18)

Specific Advisory Committees -- Committees for specific purposes can be established in particular areas such as adult education, post-secondary education, and the secondary school "in-school" distributive education programs, with sub-committees established to deal with problems of budget, curriculum, student recruitment, etc.

Post-Secondary Committee -- The post-secondary advisory committee will follow the same general procedures as their associates in the secondary school programs. Various phases of their functions and roles may be enlarged to meet the needs of the institution and students. The development of the post-secondary program requires a pre-planning committee and the establishment of an advisory committee representative of the areas of distribution the particular program covers, and the geographic area which it serves. The use of sub-committees for specific functions may be desirable, such as a steering committee, budget committee, student selection committee, and industry relations committee. The permanent chairman of the advisory committee will of necessity be quite active and must spend a great amount of time in directing committee activities. It is desirable that the chairman live near the educational institution, due to the need for frequent contacts of the chairman, coordinator, and program administrators. (6-pp. 13-14)

Adult Education Committee -- The use of the advisory committee in connection with the development and program of adult education has an often unique, but most important function. Many adult programs of a specialized nature are established and taught, for specific skills, knowledge and purposes. These programs are often initiated at the request of a particular segment of distributive and service industries. Those persons recognizing such specific needs in an industry are, in essence, a temporary advisory committee. As the program becomes formulated, the advisory committee itself will probably be formally appointed and constituted.

Adult programs require specially qualified instructors with occupational experience and competency, who must be recruited for the program. These instructors may be recruited from the ranks of professional educators or the local business community. The advisory committee can assist in locating and recruiting these instructors.

Local coordinators will work primarily with local level advisory committees. Contact with state and national committee levels will be rather limited and generally made through the state supervisor's office. Local committees will be established to lead and advise the coordinator on various activities deemed necessary to meet current and projected needs of the community.

COMMITTEE COMPOSITION

Many aspects should be considered in the development of an advisory committee. The community itself will be the major determinant, with such factors as population, growth trends, shopping center(s) and business district(s), service organizations, school system, traditions, and the general philosophy of the community-at-large examples of those which must be considered. A broad, general outline of an effective committee will be presented, with the thought that each coordinator must adapt this to its most effective local formulation.

Number of Members -- Normally, the number of members of the committee will be from five to seven. The small number makes calling the committee together relatively simple. This number would exclude the high school principal or his representative and the distributive education instructor-coordinator, who act as ex-officio members. The committee should be limited to a maximum of seven members to maintain flexibility and effectiveness.

Qualifications for Membership -- Persons under consideration for advisory committee membership should be: (1) respected in the business community; (2) in a responsible position, preferably a distributive occupation; (3) interested in distributive education programs; (4) willing and able to contribute to the effectiveness of the committee and distributive education program; (5) able to work with other members of the committee without undesirable conflict; and (6) moral and ethical, neither exploiting the committee or students for their own benefit.

Representation of Community Resources -- It is desirable to have each major shopping center and business district in the area being served represented as well as chain organizations, large and small businesses; and the major distributive and service classifications of business in the community (i.e., food, clothing, etc.).

Service organizations are a source of good, competent, interested individuals. The representatives selected should be businessmen with specific interests in distributive education. In areas with many service groups, the membership of the advisory com mittee might be rotated on a yearly basis. Some communities, especially larger cities, have a large, effective labor movement in distributive businesses. Consideration should be given to the need for cooperation from labor organizations in the local situation. Representation of educational institutions, government and the general public would usually be limited to an ex-officio status. Though each of these groups are intensely interested in any program in the public schools, their participation on an active, voting basis could negate the relationship of school and business, and depreciate the status and interest of the business representatives. Particular problems requiring information and cooperation by non-members may necessitate solicitation of these non-members as consultants by the committee.

ORGANIZATION OF COMMITTEE AND MEETINGS

The distributive education instructor-coordinator must utilize the advisory committee for the most effective pursuit of the goals of the distributive education program. Thus, he must familiarize the committee with all facets of the program, and solicit their advice and assistance. He must acquaint the members of the committee with the purpose and duties of the committee and insure that it is so used. The instructor-coordinator will anticipate problems and needs, planning advisory committee meetings for specific purposes, directed toward promoting and developing the distributive education program. The instructor-coordinator will submit the distributive education program to an evaluation by the advisory committee with the aim of continual improvement. He will serve as the secretary to the advisory committee and as a non-voting member. As secretary, he will record, maintain and distribute to each member of the committee minutes of every meeting. He is further responsible for notifying members and the delegated school authority of the meeting date, time and place. He should provide all advisory committee members with an agenda and issues to come before the committee prior to the meeting, preferably a week in advance.

Approval and Invitation -- Authorization for the formal organization of an advisory committee should be obtained from the local board of education, using this manual as a guide. It should be emphasized that the invitation to serve and the appointment of advisory committee members is a school authority function, and that the initial approval should designate the person authorized to invite and appoint. (see Figure 2, p. 9)

The coordinator should prepare a list of prospective committee members for approval by the school board, superintendent of schools, or school principal, depending upon the delegation of authority. It is advantageous for the superintendent to individually contact by letter or telephone the prospective members for their acceptance. A sample letter is shown in Figure 3, page 10. It may be advisable to contact the prospective member to determine his willingness to serve prior to proposing his membership to the board of education.

Committee Structure -- A chairman should be appointed by the instructor-coordinator with the approval of the superintendent and/or principal. Sub-committees should be formed as needed, utilizing the particular talents and resources of the committee members. Possible sub-committees may include (1) steering committee, (2) budget committee, (3) student selection committee, (4) business relations committee. Other sub-committees will be suggested by the on-going activities of the individual advisory committees.

Length of Service -- Members should be appointed for a definite term, usually from one to three years. Initial appointments should be for staggered terms to provide continuity of experienced members on the committee. This also serves to bring in members with new ideas and enthusiasm every year. Should the instructor-coordinator desire to retain the services of an interested and effective committee member, he will strive to have this member reappointed. Much of the effectiveness of the committee will depend on the unflagging interest of its members.

Steering Committee -- It may be advisable, at the establishment of a new distributive education program in a community,

BLANK CITY PUBLIC SCHOOLS

1 September 19__

TO THE BOARD OF EDUCATION:

The effectiveness of the distributive education program at ______________High school depends in large part upon the cooperation and participation of local businessmen and the community at large. Accordingly, it is recommended that the Board approve the establishment of an advisory committee, as outlined in the Ohio Distributive Education Operational Manual: Selection and Use of Advisory and Occupational Committees, to be composed of _______ members representing the distributive and service businesses and occupations of________City. Further, that these members be invited to serve and be appointed by the ______________(superintendent, principal) upon recommendation of the distributive education instructor-coordinator. The advisory committee will serve in an advisory capacity to the distributive education instructor-coordinator, said coordinator and his principal acting as ex-officio members of the committee.

____

Instructor-coordinator

____

Principal,_______________High School

____

Superintendent of Schools

M . . . ________________moved, seconded by M . . . _________, that the above recommendation for the establishment of an advisory committee be approved.

Figure 2.--Sample recommendation for Board of Education Approval.

BLANK CITY PUBLIC SCHOOLS

1 September 19__

Mr. John Jones, President
Blank City Stores, Inc.
Blank City, Ohio

Dear Mr. Jones:

You have been recommended by the distributive education instructor-coordinator at Blank City High School, Mr. Joseph Smith, and his principal, Mr. Ralph Brown, as being very interested in the success of the distributive education program in our community. The distributive education program, being a cooperative-type program, in which the students learn on-the-job as well as in the classroom, requires the cooperation of business leaders such as yourself in order to accomplish its purpose. The Board of Education has approved the establishment of an advisory committee to the distributive education program. This committee will be composed of businessmen and civic leaders engaged in or interested in distribution, and the distributive education program. The advisory committee will act in the capacity as advisors to the coordinator, Mr. Smith, seeking to facilitate his work, and to pursue the growth and development of distributive education.

The Board of Education invites you to join with other interested business leaders in serving on the advisory committee. The first formal meeting of the group will be held at 2:00 p.m. at Blank High School. Mr. Smith will provide you with an agenda and further information prior to the meeting.

I would like to express my appreciation and that of the Board of Education for your service to the youth and school programs of Blank City.

Sincerely,

Superintendent of Schools

Figure 3.--Letter of invitation to prospective advisory committee members.

to appoint a steering committee, with board of education approval and appointment, but for a term of temporary service. The members of this steering committee who prove to be effective may be reappointed as members of the permanent advisory committee at a later date. Such a procedure provides the coordinator with initial community-business assistance in an area with which he may not be familiar, without forcing him to continue with the services of those who do not prove to be effective or favorable in the promotion and development of distributive education.

COMMITTEE MEETINGS

Advisory committees organized for the first time will normally meet several times during the first year. This will be determined by the regular meeting schedule and the need for special meetings. The committee should never be called together unless there is a definite reason that justifies the meeting. After the program is established, two or three meetings yearly, with others called as needed, may be adequate.

Regularly planned meetings will meet as scheduled. Special meetings may be called at the request of committee members or the instructor-coordinator as needed. The coordinator, serving as secretary of the committee, shall notify members in advance. At various times it might be advisable to invite other people to meetings in an advisory or informative capacity, such as state department officials, guidance counselors, state employment office personnel, union representatives or professional people.

Agendas -- The coordinator shall prepare and provide an agenda for each committee member at least one week prior to the called meeting. A Sample Agenda of the Initial Meeting appears in Figure 4, page 12; and an Agenda Outline for Regular Meetings, in Figure 5, page 13.

Time and Place of Meetings -- All advisory committee meetings, unless of a special purpose, should be held at the same location as the classroom instruction. Committee members should be familiar with the classroom facility, equipment and materials available to the distributive education program.

Distributive Education Advisory Committee Meeting

Agenda

1. Introduction of all members.
2. Appointment of temporary chairman.
3. Appointment of Secretary (distributive education instructor-coordinator).
4. Explanation of the program and the need for an advisory committee.
5. Functions of the Advisory Committee.
6. Responsibility of the Advisory Committee.
7. Responsibility of Permanent Chairman.
8. Election of a permanent chairman (never school administrator or distributive education instructor-coordinator).
9. Term of appointment.
10. Selection of time and place of meetings.
11. Other business.
12. Adjournment.
13. Refreshments.

Figure 4.--Agenda, Initial Advisory Committee Meeting.

Distributive Education Advisory Committee Meeting

Agenda

1. Call to order by Chairman.
2. Introduction of guests.
3. Reading of minutes by Secretary.
4. Old business
5. New business.
6. Comments and discussion by/with guests.
7. Adjournment.
8. Refreshments.

Figure 5.--Agenda, Regular Advisory Committee Meetings.

Meetings of the advisory committee must be arranged for the convenience of the members to avoid conflict with other community activities and the demands of the member's businesses. The coordinator should be familiar with the meeting and activity schedule within the community.

The superintendent of schools and building principal should be notified and urged to attend or have his representative attend, acting in the capacity of an ex-officio member. Attendance at the advisory committee meeting is not limited to appointed members, and as the situation demands, may include other persons in an informative, consultant, or observer status. The coordinator, in cooperation with the chairman of the committee, should consider the furtherance of his distributive education program and those persons who can best contribute to its growth and development, utilizing their abilities, talents and positions as they make themselves available.

ADVISORY COMMITTEE ROLE AND FUNCTION

The advisory committee is an integral part of any distributive education program. The members of the committee, through vital involvement, become committed to distributive education, and a forceful tool of the instructor-coordinator. The degree to which the coordinator guides and directs the function and role of the advisory committee largely determines their effectiveness. This section will present some of the areas, functions and roles of advisory committees.

Committee Objectives -- The committee may function in these areas: (1) public relations, (2) student standards and recruitment, (3) student selection, (4) standards of evaluation, (5) manpower needs and training facilities surveys, (6) student's problems, (7) promotion of DECA activities, (8) standards of training stations, (9) program facilities and aids, (10) curriculum development, (11) post-secondary education, (12), adult education, (13) legislation, and (14) development of distribution as a career and profession.

Public Relations -- The public relations needs of the distributive education program are of primary importance. Audiences of the public relations function include prospective students, employers, parents, teachers, community leaders and officials of unions, companies, and civic organizations. The distributive education instructor-coordinator, if he is to effectively reach the multiplicity of audiences to which distributive education is to be promulgated, must utilize every possible means.

The advisory committee, consisting as it does of representatives of business and civic organizations, shall serve as a source of information on distributive education to their business and professional colleagues. The advisory committee provides an important link in the liason necessary between education and business, establishing a closer relationship between educators and businessmen. Greater overall support for not only distributive education, but for the entire school program results from the involvement of community and business leaders in the educative process. The additional exposure gained through representation of civic groups on the advisory committee widens the scope of information dissemination to a much greater degree.

The entry to utilization of media such as newspapers, radio, and television stations may be enhanced since businessmen have a working relationship with the advertising and sales promotion departments of these media. The training station sponsors and advisory committee members can help open public relation doors that may otherwise remain closed.

The advisory committee, being proven and respected business and community leaders, lends prestige, knowledge and experience to principles and policy standards of the distributive education program in relationships with the general public, parents and students. Brochures, pamphlets and other promotional materials can be made available by and through the cooperation and assistance of the advisory committee.

Student Standards and Recruitment -- The advisory committee should play a major role in the development of standards for distributive education students. The experience and knowledge of the committee members of the needs of business and qualities desirable in employees, is essential to any program involving the business community. Possible guidelines for development of selection standards, though not necessarily mandatory nor all inclusive, may be: (1) class status and age; (2) health (overweight, complexion, sight, hearing, physical stamina); (3) academic record, (achievement compared with ability); (4) attendance record; (5) personal habits, personality and maturity; and (6) a discernible interest in a business career. It is necessary that none of those criteria be considered immutable, nor should the general well-being of the distributive education program be jeopardized through sole observance of them. The combined judgement of the coordinator, school administrators, guidance counsellors and businessmen is a necessary complement to any established standards.

Recruiting of distributive education students is a continuing process facilitated by the advisory committee. The prestige of established businessmen related to the distributive education program will tend to improve the image of the program, not only to students, but to faculty members, school administrators and parents. Members of the committee can also through their contacts with customers, parents, and young people, advise and actively recruit potential students through promoting careers in distributive occupations. The committee can serve as advisors to students in distributive occupation areas during guidance and career days.

Student Selection -- The utilization of the advisory committee in student selection is desirable, though the instructor-coordinator must insure that the committee function is an advisory, rather than action capacity. Thus, following the development of interest and recruiting of potential students, the school and coordinator would screen applicants for meeting of general standards, administer profile testing, interview students, and orient students to the purposes of the distributive education program and the duties and responsibilities of distributive education students. After this initial selection, an interview by the members of the advisory committee of each prospective student may be conducted. It is evident that those students assessed to be desirable candidates for the distributive education program by members of the advisory committee have an excellent recommendation for training station placement, and that the assistance of members of the committee may be more available in that placement. Further, it may be more difficult to secure training stations for candidates not recommended by the committee. If the advice of the committee is solicited, it cannot be dismissed lightly, without an attendant loss of interest and effectiveness. (See Figure 6 for suggested "Recruiting and Selection Procedure", page 18.)

Standards of Evaluation -- The advisory committee may aid the coordinator in setting standards for evaluation of students, both at the training station and in the classroom. The coordinator may develop from these standards a checklist or rating sheet to facilitate this evaluation. In the absence of school standards for dress and grooming, the advisory committee may propose criteria the coordinator can implement in the program. Other evaluation functions by the advisory committee include judging and evaluating students in DECA contests and activities.

The advisory committee can evaluate the accomplishments made by the distributive education program in their area through committee discussions and talks with businessmen, students, parents, faculty members and school authorities. Follow-up studies of distributive education graduates will also serve as an evaluation device. Criteria which might be considered may include: student employment in distributive occupation, continuing education of student, graduate's advancement in distributive occupations, businessmen's attitudes toward the distributive education program, graduate's attitudes and evaluation of the program's success. The evaluation of an individual student, the distributive education program, or any facet thereof, is valueless without follow-up by the coordinator. Only by utilization of the information gathered can the students and program be improved.

Manpower Needs and Training Facilities Surveys -- The changing complexion of distribution and distributive occupations is reflected by the employment opportunities in the field. Willis, in a speech before the AVA Convention in 1962, cited the need to prepare enough workers for jobs that are available, referring to the constance of change, effects of automation, and the increasing demands by employers for a higher level of education and

Student Recruiting and Selection Procedure

1. Publicity release (brochures, newspaper, newsletter, organization announcements).
2. Group meetings of eligible students with businessmen, coordinator, school authorities and advisory committees.
3. Distribution of application blanks to interested students.
4. Screening of applications and school records to determine meeting of general standards.
5. Administration of tests (attitude, aptitude, ability, etc.).
6. Interview of student by coordinator and guidance department.
7. Completion of health and history forms during interview.
8. Orientation program for potential students.
9. Interviews of students by advisory committee representatives.
10. Contact with parents, and signing of intent and agreement letter explaining rules and regulations governing program and students, by parents and students.

Figure 6.--Suggested "Recruiting and Selection Procedures" skill training. (14) The advisory committee can serve as an effective means of gaining access to a knowledge of the manpower needs of the community and the distributive occupations which will provide career opportunities. Further, the committee can survey the availability of potential work training stations in those areas, and businesses which will provide career opportunities and satisfactory training. The Committee can also assess the adequacy of in-school training facilities with recommendations for its improvement.

Student's Problems -- The first working experience of students may often create conflicts and problems. Some of these problems may be caused by lack of understanding of the distributive education program by the training station sponsor. The advisory committee may provide counsel and experience to the coordinator in approaching problems arising from long hours, inadequate pay, intolerable working conditions, unsatisfactory job rotation and experience at the training station, or insufficient supervision of students on the job. Members of the committee may be able to approach sponsors about such problems without causing a feeling of unwelcome interference by the coordinator. Students can look to members of the advisory committee as personal advisors and counsellors for careers and education; persons who would not ordinarily be available in such a capacity.

Promotion of DECA Activities -- Advisory committee members can participate in DECA activities as advisors, contest judges, and speakers; in the promotion of National DECA Week; in fund raising projects; in scholarship fund development; in arranging field trips and other DECA activities; regional, state and national leadership conferences; and whatever roles and functions which will enhance the DECA organization.

Standards of Training Stations -- The advisory committee is an invaluable aid to the coordinator in establishing criteria for the evaluation of training stations. Two basic considerations, namely overall educational philosophy and objectives of training stations and the characteristics of these training stations in relation to the community, must be analyzed.

Work training station desirability can be assessed by the coordinator through the aid of the advisory committee with check lists, business trend information, counseling services, store training sessions, working conditions and student improvement. The overriding principle for assessment of a potential or existing training station is if it will provide appropriate on-the-job training in an area of distribution, suitable to the needs of the student and the distributive education program.

Program Facilities and Aids -- The distributive education program requires the availability of up-to-date equipment and instructional materials to permit realistic training and instruction with prevailing distributive practices. The advisory committee, as operating businessmen, innovating and utilizing from day-to-day methods, procedures, and materials, will be best suited for establishing the needs and recommending equipment and materials selection through the coordinator to the Board of Education. Much of this material and equipment will be secured by Board of Education monies from general funds and state foundation funds. It is desirable that the advisory committee members themselves appear before the board, establishing the needs of the program and justifying the purchase of the needed equipment and supplies.

The advisory committee will further encourage the business community to make substantial contributions by the donation of equipment, supplies, library materials, and direct financial aid. "The A. C. should advise the D. E. Coordinator of information, visual aids available and help in their procurement." (15) The advisory committee should keep the coordinator aware of resource materials both within and without the community, facilitating the arrangement for and use of these items.

Curriculum Development -- The number of distributive occupations and the scope of distribution prevents inclusion of all phases of distribution in the preparation of distributive education students. The advisory committee may recommend the inclusion of particular areas, phases, or occupations; the expansion of such areas; or their elimination from the program. Such action will be based upon the career goals of enrolled students, the training stations in use, and the manpower needs of the business community.

It is necessary to maintain a continual evaluation of curriculum as related to current business practices. This evaluation by business persons confirms the course of instruction, and can be of public relations value in the community. Evaluation may be performed by a sub-committee in cooperation with the instructor-coordinator.

An evaluation of student preparation may be assessed by members of the advisory committee and by training station sponsors reporting to them and/or the instructor-coordinator. The coordinator may not realize the extent or specific areas of deficiencies. This evaluation may determine deficiencies in student knowledge and skills peculiar to distributive education (handling money, fundamentals of display, advertising, selling, etc.) or general skills such as spelling, writing, arithmetic, etc. Information on general preparation will be helpful in the school's efforts to provide, revise, and improve academic instruction. Specific complaints from businessmen provide tangible evidence of insufficient preparation.

Curriculum development can be further enhanced by the assistance of the advisory committee in the selection of texts and reference books. Though textbook selection is an educational task, the committee might review and evaluate the available published material for realism of textual material, adequacy of illustrations and examples, depth of treatment of subject matter areas, and currency of overall material. This review may find serious omissions or dated procedures, thereby avoiding the purchase of an inadequate text.

The advisory committee can further assist in the curriculum area by donation, procurement and/or recommendation of trade journals, periodicals, films, training materials, forms, company tests, advertising and promotion aids and other items appropriate to the curriculum.

Legislation -- The advisory committee and its members, as representatives of businesses and civic organizations, have invaluable contacts with trade associations on the state and national level, and the state and national counterparts of local civic organizations. Thus, distributive education program needs and other educational needs of the community may be presented to boards of education, local city councils, and state and national legislatures.

Development of Distribution as a Career -- A further responsibility of the advisory committee is to enhance and develop opportunities in distributive occupations, upgrading careers in distribution. Such activities as National Careers in Retailing Week, National DECA Week, and business area development committees will present opportunities for the advisory committee to improve and enhance the career opportunities in distribution.

EVALUATION

Leaders in distributive education have agreed that an effective advisory committee is of sufficient value to justify the time and energy involved in organizing and operating it. (13-p. 41) Evaluation of the distributive education program is a two-fold effort. First, the advisory committee should evaluate the effectiveness of the distributive education program itself; second, the coordinator should evaluate the effectiveness of the advisory committee, and the benefits derived from its use to the distributive education program.

Evaluation of Program -- Although evaluation is continuous, a once per year, preferably mid-year, evaluation should be conducted of the distributive education program by the advisory committee. It is desirable to evaluate the program in relation to the objectives, accomplishments, and problems.

Materials for performing this evaluation may be obtained by the distributive education instructor-coordinator from sources such as: coordination contacts with training stations; on-the-job rating sheets; information from school administrators, counselors, and other teachers; information gathered from parents of students in the program; information from merchants, business people and business organizations not directly connected with the distributive education program; follow-up studies of distributive education graduates and adults completing special programs; and other available data pertinent to the measurement of the achievement of purposes and goals of the program. In addition to the information provided by the coordinator and the school, each member of the committee will undoubtedly contribute ideas and guidance for the improvement of the program from his own experience with the distributive education program, and from his general knowledge of business and the community.

Evaluation of Advisory Committee-- The extensive time of both coordinator and members of the advisory committee devoted to the work of the committee must be fruitful to justify the expenditure. The coordinator must determine the value of his advisory committee to his program, and discover the areas of weaknesses that require reinforcement. Although evaluation of the advisory committee is a continuing process, the coordinator should make a formal evaluation a culminating activity of the school year.

The principle means of evaluation is a comparison of advisory committee functions and activities with the goals and purpose of advisory committees as outlined in the manual, section 4, as adapted to the local situation, needs of the community and organization of the committee. Further, the coordinator will examine the assistance rendered by the committee in creating a favorable attitude toward distributive education in the community; suggesting workable solutions to problems encountered by the coordinator; guiding the school and coordinator in curriculum development; assisting in procuring needed equipment, instructional aids and materials, suplies, and resource persons; and assisting in the recruiting and selection of students, locating appropriate training stations, and placement of program graduates. An instrument for incorporating these criteria is an evaluation such as that used by the Burt project in their study of advisory committees. (2)

The coordinator and committees could assess the year's activities in the sense of an inventory taking, which any member of the committee finds essential in his business. This evaluation of the distributive education program and the advisory committee activities is a balance sheet of the assets, liabilities, and net worth of the committee's efforts throughout the school year.

BIBLIOGRAPHY

1. Barlow, Melvin L. (Editor) Yearbook of the National Society for the Study of Education, Part I, Vocational Education. Chicago: The Society, 1965. p. 285.

2. Burt, Samuel M. "What is Your Advisory Committee Doing?" American Vocational Journal, (40:5) May, 1965. p. 15

3. Checklist of Services Provided by Industry Advisory Committees for Vocational Schools, Technical Institutes, and Junior Colleges. Washington, D. C.: The W. E. UpJohn Institute for Employment Research, 709 Westnedge Avenue, Kalamazoo, Michigan.

4. Coordinator's Handbook, 1955. State Board of Education, Commonwealth of Virginia, Virginia.

5. Haas, Kenneth B. How to Coordinate School-Work Training. Cincinnati: The Gregg Publishing Company, January 1, 1945.

6. Logan, Wm. B.; Nye, Bernard; and Linton, Leon. A Two-Year Post-High School Distributive Education Program in the Wholesaling Field: Manual I, Organizing and Conducting the Program. Report of the Ohio Wholesale Management Development Program. Columbus, Ohio: The Ohio State Department of Education, Distributive Education Materials Laboratory, 1965.

7. Moon, Helen. How to Use the Advisory Committee. Speech given at the American Vocational Association Convention, Chicago, November 26, 1953.

8. Operations Manual: Adult Distributive Education, Distributive Education Services, State Department of Education, Columbus 15, Ohio.

9. Questionnaire for Use in Guiding Interviews. Washington, D.C.: The W. E. UpJohn Institute for Employment Research, 709 Westnedge Avenue, Kalamazoo, Michigan.

BIBLIOGRAPHY(Continued)

10. Representative Advisory Committees. Washington, D.C.: U.S. Office of Education (FSA), January 18, 1941.

11. Nelson, Jay L. 200 Advisors Serve 'Trade Tech'. American Vocational Journal, (40:5) May, 1965. p. 12.

12. Vocational Education Act of 1963, P. L. 88-210, Washington, D. C.: U. S. Government Printing Office, 1963.

13. Warmke, Roman F. Distributive Education Issues. Cincinnati: Southwestern Publishing Company, Monograph 102, 1961.

14. Willis, Benjamin C. "Awareness and Action for Progress in Distributive Education." Theory into Practice, Volume III, No. 5, The Ohio State University, December, 1964. pp. 183 f.

15. Your Public Relations. American Vocational Association, Inc., Washington, D. C., 1954. p. 5.

DISTRIBUTIVE EDUCATION PROGRAMS IN OHIO
1965-66

City	School
Post-Secondary	
Canton	Timken Vocational School
Columbus	Columbus Area Tech School
Dayton	Patterson Coop High School
Lorain	Lorain County Community College
Mansfield	Mansfield School of Technology
In-School	
Akron	Coventry High School Kenmore High School Springfield Township High School
Alliance	Alliance High School
Amelia	Amelia High School
Ashland	Ashland High School
Ashtabula	Ashtabula High School
Barberton	Barberton High School
Bellaire	Bellaire High School
Bellefontaine	Bellefontaine High School
Berea	Berea High School
Blanchester	Blanchester High School
Bowling Green	Bowling Green High School
Bucyrus	Bucyrus High School
Canton	Timken Vocational High School
Carlisle	Carlisle High School
Chillicothe	Chillicothe High School
Cincinnati	Aiken High School Hughes High School Princeton High School Sycamore High School Taft and Courter High School Western Hills High School Withrow High School Woodward High School
Circleville	Circleville High School

Clayton	Northmont High School
Cleveland	Collingwood High School
	East High School
	Glenville High School
	John Hay High School
	John Marshall High School
	James Rhodes High School
	West Tech High School
Columbus	Brookhaven High School
	Central High School
	East High School
	Mifflin High School
	North High School
	South High School
	West High School
Copley	Copley High School
Cuyahoga Falls	Cuyahoga Falls High School
Dayton	Northridge High School
	Patterson Coop High School
	Walter Stebbins High School
	Wayne Township High School
Defiance	Defiance High School
Deshler	Deshler High School
Eaton	Eaton High School
Elyria	Elyria High School
Euclid	Euclid High School
Fairfield	Fairfield High School
Findlay	Findlay High School
Fredericktown	Fredericktown High School
Gahanna	Lincoln High School
Galion	Galion High School
Germantown	Germantown High School
Greenfield	McClain High School
Hamilton	Ross High School
	Taft High School
Ironton	Ironton High School
Jackson	Jackson High School
Kansas	Lakota High School
Kenton	Kenton High School
Lancaster	Lancaster High School

Lebanon	Lebanon High School
Lima	Lima High School
Lockbourne	Hamilton Township High School
Logan	Logan High School
Mansfield	Madison High School
	Malabar High School
	Mansfield High School
Mantua	Crestwood Local High School
Marietta	Marietta High School
Marion	Marion-Harding High School
Mason	Mason Local High School
Massilon	Washington High School
Mentor	Mentor High School
Miamisburg	Miamisburg High School
Middletown	Middletown High School
Mt. Vernon	Mt. Vernon High School
Napoleon	Napoleon High School
Newark	Newark High School
North Baltimore	North Baltimore High School
Norwalk	Norwalk High School
Norwood	Norwood High School
Ottawa	Ottawa-Glandorf High School
Parma	Parma Senior High School
	Valley Forge High School
Penta County	Penta County Joint Vocational School
Port Clinton	Port Clinton High School
Portsmouth	Portsmouth High School
Ravenna	Ravenna High School
Reynoldsburg	Reynoldsburg High School
St. Marys	St. Marys Memorial High School
Sidney	Sidney High School
Southwestern City School District	Franklin Heights High School
	Grove City High School
	Pleasantview High School
Springfield	North High School
	South High School
Stow	Stow High School
Strongsville	Strongsville High School
Sylvania	Sylvania High School
Tallmadge	Tallmadge High School

Toledo	Rogers High School
	Whitmer High School
Trotwood	Trotwood High School
Vandalia	Vandalia-Butler High School
Warrensville Heights	Warrensville Heights High School
Washington, C. H.	Miami Trace High School
	Washington C. H. High School
West Carrollton	West Carrollton High School
West Chester	Lakota High School
West Middletown	Madison High School
West Milton	Milton-Union High School
Westerville	Westerville High School
Whitehall	Whitehall-Yearling High School
Willard	Willard High School
Willoughby	North High School
Wilmington	Wilmington High School
Wooster	Wooster High School
Zanesville	Zanesville High School

VT 005 136
Bibliography of Studies in Occupational Education Conducted in Minnesota--1965-67.

Jiloca, Editha L.
Minnesota Res. Coord. Unit in Occup. Educ., Minneapolis.
Pub Date - 67
MF AVAILABLE IN VT-ERIC SET. 30p.

*BIBLIOGRAPHIES, *VOCATIONAL EDUCATION, *INDUSTRIAL EDUCATION, *TECHNICAL EDUCATION, *EDUCATIONAL RESEARCH, OCCUPATIONAL SURVEYS, DOCTORAL THESES, MASTERS THESES, SURVEYS, INSTRUCTIONAL MATERIALS, GRADUATE SURVEYS, OCCUPATIONAL GUIDANCE,

The 300 projects reported include proposed, in process, and completed research studies, instructional materials, occupational and educational surveys, theses, and followup studies of graduates. They are classified under the topics--(1) Agricultural Education and Vocational Agriculture, (2) Business, Distributive, and Economic Education, (3) Industrial Arts, Trade, and Technical Education, (4) Industrial Management and Industrial Relations, (5) Occupational Curriculums, Programs, Instructional Materials, and Methods, (6) Occupational Surveys, (7) Vocational Education, and (8) Vocational Guidance and Counseling. The bibliography provides information on the location, status, and support of current and completed research. (EM)

VT 005 136

SEP 29 1967

ED022065

BIBLIOGRAPHY OF STUDIES
IN OCCUPATIONAL EDUCATION
CONDUCTED IN MINNESOTA

1965-67

VT005126

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

BIBLIOGRAPHY OF STUDIES IN OCCUPATIONAL EDUCATION CONDUCTED IN MINNESOTA: 1965-67

Compiled By
Editha L. Jiloca

Minnesota Research Coordination Unit In Occupational Education

University of Minnesota
Minneapolis, Minnesota

FORWORD

The Minnesota Research Coordination Unit in Occupational Education has been engaged in compiling information about studies conducted by persons in Minnesota which have implications for the development, improvement or conduct of vocational, technical, and practical arts education programs. By providing information about current as well as completed research, this project hopes to facilitate research activity and inter-researcher communication in the field of occupational education and other related fields.

This year's survey, which was started in the fall of 1966, included studies completed between 1965 and 1967, studies presently being conducted, and studies for which formal research proposals have been submitted. The following sources of information were contacted: presidents, deans, and heads of private colleges, state colleges, junior colleges, and other educational institutions; heads of departments of the University of Minnesota; State Department of Education officials; school superintendents; high school principals; educational and professional organizations; directors of area vocational schools; directors of research of private firms and agencies; and individual researchers on our mailing list. Studies reported include those completed, proposed or being conducted by staff members as well as by students fulfilling degree requirements.

The studies in the present bibliography are classified into eight sections. Three of the eight areas are subdivided into sub-sections. The bibliography provides information on the location, status, and support, if any, of current and completed research. The bibliographical items are arranged as follows: name of investigator, title of study, address of investigator, status of project (completed or in progress). Other kinds of information, such as expected completion date (for studies in progress), organization supporting the project, and whether the study is or was conducted to fulfill a degree requirement, are included if reported. When a study has been published or reported in a journal or periodical, the investigator's current address is given immediately after his name and preceding the title of the study. The name and date of the publication are given after the title of the study. For investigators with more than one study reported, the investigator's address is given in the first of the bibliography entries belonging to the same name. For some degree-fulfilling studies the address given is that of the university or college department in which the investigator was a student. A copy of the dissertation, thesis or research paper is on file in the library of the given department.

Inquiries about individual studies should be directed to the investigator. Further information may be obtained from the office or organization supporting the research project.

Jerome Moss, Jr.
Howard F. Nelson
Co-Directors

TABLE OF CONTENTS

FORWORD

Section Page

1. AGRICULTURAL EDUCATION AND VOCATIONAL AGRICULTURE. 1
2. BUSINESS, DISTRIBUTIVE, AND ECONOMIC EDUCATION 2
3. INDUSTRIAL ARTS, TRADE, AND TECHNICAL EDUCATION. 6
4. INDUSTRIAL MANAGEMENT AND INDUSTRIAL RELATIONS 9
5. OCCUPATIONAL CURRICULUMS, PROGRAMS, INSTRUCTIONAL MATERIALS AND METHODS. 10
6. OCCUPATIONAL SURVEY. 13
    Manpower Needs, Entry Occupations, and Training Requirements 13
    Workers' Attitudes, Abilities, Adjustment, and Satisfaction. 14
7. VOCATIONAL EDUCATION 15
    Objectives, Philosopy, Policies, and Problems. 15
    Occupational Education Research. 16
    Teacher Education. 16
8. VOCATIONAL GUIDANCE AND COUNSELING 17
    Academic, Personal and Social Characteristics and Problems of Students and Dropouts 17
    Counseling and Guidance Services 19
    Follow-up Studies of Graduates 21
    Measurement, Evaluation, and Prediction. 22
    Occupational Choice and Occupational Information 24
    Vocational Interests and Preferences 25

AGRICULTURAL EDUCATION AND VOCATIONAL AGRICULTURE

Bear, W. F., Nelson, C. L., and Persons, E. A. Evaluation of vocational-agriculture shop accidents in the state of Minnesota. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. Completed: January, 1967. Source of support: United States Public Health Service.

Cullen, Mike and Hartog, Edward. A program for training boys in agriculture-business. Willmar Junior High School, Willmar, Minnesota. Completed: August, 1966. Sources of support: Minnesota State Department of Education (Vocational Agriculture Division), United States Office of Education, and Ohio State University. Research paper by Edward Hartog was done as Master's paper. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota.

Francis, Gene V. A course of study for on-the-farm instruction in farm management. Blooming Prairie High School, Blooming Prairie, Minnesota. Completed: 1966. To fulfill M. A. degree requirements, Institute of Agriculture, University of Minnesota, St. Paul, Minnesota.

Freier, Ernest E. Areas for off-farm occupational opportunities and training needs. Mankato Area Vocational School, Mankato, Minnesota. Completed: 1966. Sources of support: Department of Agricultural Education, University of Minnesota and State Department of Education.

Lauer, Alois J. Employment opportunities and needed competencies in agricultural occupations other than farming in Anoka County, Minnesota. Completed: 1965. To fulfill M. A. requirements, Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. Sources of support: Department of Agricultural Education, University of Minnesota; State Department of Education; and carried out by Mankato Area Vocational School.

Loewen, Aganetha. Retention of students in agriculture, forestry, and home economics in relation to high school rank and by academic performance. Graduate School Research Center, University of Minnesota, Minneapolis, Minnesota. Completed: 1966.

Marvin, R. Paul. A study of the deployment and costs of farm power and machinery on selected farms. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. Completed: 1966. Source of support: Department of Agricultural Education, University of Minnesota.

Marvin, R. Paul. Descriptive analysis of the vocational opportunity and migration of students from school with various mean ability levels within the vocational agriculture program. Completed: 1966. Source of support: Graduate School Research Center, University of Minnesota.

Marvin, R. Paul. Electronic data processing of farm records. Completed: 1966. Source of support: Department of Agricultural Education, University of Minnesota.

Marvin, R. Paul. Process and products for teaching agriculture and literacy skills to adults and youth in developing countries. Completed: 1966. Source of support: International Programs Office, University of Minnesota.

Nelson, Curtis L. Basic skills and practices needed by vocational agriculture instructors in Minnesota. Hastings High School, Hastings, Minnesota. In progress.

Nodland, Truman R. Identification of personal factors and their relationship to financial success in farming. Department of Agricultural Economics, University of Minnesota, St. Paul, Minnesota. Completed: 1966. Sources of support: Cooperative State Research Service, Hatch Act Funds, and University of Minnesota.

Persons, E. A., and Swanson, G. I. An economic study of the investment effects of education in agriculture. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. Completed: 1967. Source of support: United States Office of Education.

Peterson, Milo J. Instruction guide for farm business management. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. In progress. Source of support: United States Office of Education.

Peterson, Milo J. Relationship of education to farm management. Completed: 1966. Source of support: United States Office of Education.

Peterson, Milo J. Study of off-farm agricultural occupations. Completed: 1966. Source of support: Graduate School Research Center, University of Minnesota.

Swanson, Gordon I. A micro-economic study of the income effects of adult instruction among farm families and its secondary effects of goal aspiration of their children. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. Completed: 1966. Source of support: United States Office of Education.

Swanson, G. I., Persons, E. A. and Peterson, Milo J. Educational restrictions to agricultural success and the relationship of education to income among farmers. Completed: 1966. Source of support: United States Office of Education.

Wacholz, Marlyn W. Work experience programs in high school vocational agriculture. Renville High School, Renville, Minnesota. In progress.

BUSINESS, DISTRIBUTIVE, AND ECONOMIC EDUCATION

Anderson, Darlene. The effect of setting typewriting speed goals on speed achievement as measured by straight copy writings. Completed: 1966. To fulfill M. A. requirements, Department of Business Education, University of Minnesota, Minneapolis, Minnesota.

Ashmun, Richard D. Economic competencies for young workers: a teacher's guide. Department of Distributive Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: U. S. Office of Education.

Ashmun, Richard D. The effectiveness of a non-computer business game in teaching post-secondary business problems classes. Completed: 1966. Ph. D. dissertation.

Baumgartner, James M. A survey of uses made of typewriting skills by the 1961 to 1965 Spring Valley, Wisconsin high school graduates who completed the one-year typewriting courses. Winona State College, Winona, Minnesota. Completed: 1966. Master's thesis.

Clark, Marvin. Use of specially prepared copy for the development of economic understandings in typewriting. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. To fulfill Ph. D. requirements.

Crosby, Raymond. Success and cut off points for Steno I and II, Bookkeeping, and Trig. Sauk Center Senior High School, Sauk Center, Minnesota. Informal continuing studies begun in 1961.

Delorey, Ruth. Trends in office occupations with implications for business education. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1967. To fulfill M. A. requirements.

Dittes, Ruth M. An experimental study to evaluate the use of a multiple-channel dictation system in Shorthand I. Richfield Senior High School, Richfield, Minnesota. Completed: 1965. For MBE degree, Department of Business Education, University of Colorado, Greely, Colorado.

Eckert, Sidney. A comparison of two teaching methods in general business economic understandings of distributive education students. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Hanson, Ethel. A case study of general business teachers to examine the relationship of content presentation to creativity as measured by the Torrance Creativity Inventory. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Hopkins, Charles. A feasibility study of a cooperative office education work experience program at Mounds View High School. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. To fulfill M. A. degree requirements.

Hubbard, James B. Follow-up study of the business graduates of Bagley High School for the years 1961-1965. Bagley Junior-Senior High School, Bagley, Minnesota. Expected completion date: 1967. Source of support: Bagley High School. To fulfill M. A. degree requirements.

Klaurens, Mary. The underlying sources of job satisfaction of distributive education student-trainees. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1967. To fulfill Ph. D. degree requirements.

Kopp, Bill. An evaluation of high school bookkeeping by the business community. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1967. To fulfill M. A. degree requirements.

Lackore, Lucille E. (Mrs.) The origin and development of the business department of the Winona, Minnesota Area Vocational-Technical School and an analysis of its graduates. Winona State College, Winona, Minnesota. Completed: 1966. Master's thesis.

Laughlin, Lucille. Study of difficulty levels of Diamond Jubilee shorthand dictation materials. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1967. To fulfill M. A. degree requirements.

Meyer, Lois. A test of the validity of a measure of difficulty of shorthand dictation materials. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Meyer, Warren G. Economics for young workers (a curriculum guide). Department of Distributive Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: U. S. Office of Education.

Meyer, Warren G. Pilot training project based on directed occupational experience for teachers of marketing and distribution. In progress. Expected completion date: 1967. Source of support: U. S. Office of Education.

Mickelson, William Charles. The practicability of introducing economic concepts in bookkeeping classes. Mankato Senior High School, Mankato, Minnesota. Completed: 1966. To fulfill M. A. degree requirements.

Nordling, Marge. The job set system in the teaching of first year typewriting: a plan for individual differences. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. To fulfill M. A. degree requirements.

Norman, Adrian. Value of business education courses to female graduates. R. R. 1, Hinckley, Minnesota. Completed: 1966.

Olson, Harry. Relationships between certain personality characteristics of distributive education teacher coordinators and job situations. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1967. To fulfill Ph. D. degree requirements.

Olson, Norma. A follow-up study of the women of 1955 through 1965 in business education of the University of Minnesota. Completed: 1966. To fulfill M. A. degree requirements. Department of Business Education, University of Minnesota, Minneapolis, Minnesota.

Peterson, Charles. The prediction of students' success in college accounting. Completed: 1966. To fulfill Ph. D. degree requirements. Department of Business Education, University of Minnesota, Minneapolis, Minnesota.

Poorman, Gary. A national study of distributive education in public junior colleges. Austin Junior College, Austin, Minnesota. In progress. For Master's degree, Department of Business Education and D. E. Teacher Education, State College of Iowa, Cedar Falls, Iowa.

Price, Ray G. Economic understandings of distributive education students. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966.

Roswold, Myron. The course curriculums in business education in high schools in Minnesota, Wisconsin, and Michigan. Grand Rapids High School, Grand Rapids, Minnesota. In progress. Source of support: University of Minnesota. To fulfill M. A. degree requirements, Department of Business Education, University of Minnesota.

Roswold, Myron. Jobs available in our community. In progress.

Safratowich, Mike. Survey of banking machines of medium size banks in West-Central Minnesota. Wadena Area Technical Institute, Wadena, Minnesota. Completed: 1966. Source of support: Wadena Technical Institute.

Sloan, Rita. An experimental study in the application of the micromolar behavior theory to the instruction of beginning Gregg shorthand. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1967. To fulfill Ph. D. degree requirements.

Stanley, Ruth. Measurement of changes in economic attitudes of college students in economics and business administration. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Tennyson, W. and Meyer, W. G. Pilot training project for teachers of distribution and marketing focusing on responsibilities for career development. Department of Distributive Education, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1968. Source of support: U. S. Office of Education.

Uthe, Elaine. An evaluation of the difficulty level of shorthand dictation materials. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Warmke, Roman F. A scope and sequence development of economic understandings in grades K-12. Minnesota State Council on Economic Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Sources of support: Joint Council on Economic Education, Minnesota State Council on Economic Education, and Minneapolis Public Schools.

Warmke, Roman F. An appraisal of the principles course in economics. Completed: 1966. Source of support: Joint Council on Economic Education.

Warmke, Roman F. Curriculum guide for teaching economic concepts to young workers. Completed: 1966. Source of support: U. S. Office of Education.

Warmke, Roman F. Development and evaluation of materials designed to enhance economic understandings in grades K-7. Completed: 1966. Sources of support: Bush Foundation, Minnesota State Council on Economic Education, St. Paul Foundation, St. Paul Public Schools.

Warmke, Roman F. Development and evaluation of student materials in economics designed for the cooperative part-time program. Completed: 1966. Source of support: Minnesota State Council on Economic Education.

Warmke, Roman F. Evaluation of the model and pilot school project in economic education. Completed: 1966. Source of support: Joint Council on Economic Education.

Warmke, Roman F. Using community resources to develop economic understandings. Completed: 1966. Sources of support: Area Redevelopment Administration and Minnesota State Council on Economic Education.

Warmke, Roman F., Meyer, Warren G. and Klaurens, Mary. Occupational relations guide. Completed: 1966. Co-sponsored by the Minnesota Council on Economic Education and Minnesota State Department of Education. Source of support: U. S. Office of Education.

Weinman, Charles H. Handbook for office occupations coordinators. Laverne High School, Laverne, Minnesota. In progress. Expected completion date: 1967. Sources of support: Mankato State College and Minnesota State Department of Education.

Willis, Milton. A study of Bemidji State College business education teachers regarding their opinions about the quality of their undergraduate preparation in the business department. Bemidji State College, Bemidji, Minnesota. In progress. Source of support: Bemidji State College

Zigreigo, Anthony. An office procedures project. Department of Business Education, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1967. To fulfill M. A. degree requirements.

INDUSTRIAL ARTS, TRADE, AND TECHNICAL EDUCATION

Aune, Arnt. Follow-up study of graduates of electronics, arch., drafting, carpentry, and welding. Area Vocational School, Thief River Falls, Minnesota. Completed: 1966.

Bingham, Duane. A historical study of classical Greek furniture design. Completed: 1965. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Bortz, Richard. A study of the effect of physical maturity and intelligence on the manipulative performance of junior high school students. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Buranen, Roger H. Teacher-made aduio-visual materials for industrial arts teaching. Completed: 1965. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Clinger, James F. An evaluation of the student craftsman's fair program in Minneapolis. Completed: 1965. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Duenk, Lester G. Study of the concurrent validity of the Minnesota Tests of Creative Thinking for eighth grade industrial arts students. Department of Vocational Education, Virginia Polytechnic Institute, Blacksburg, Va. Completed: 1966. Ph. D. dissertation, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Erdman, William D. Mathematics of beginning courses in drafting, metal and wood at the ninth grade level at Menomonie Falls public schools. Completed: 1966. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Ernst, Howard E. Profiles of Minnesota day school trade and industrial teachers in the area vocational schools. Completed: 1965. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Fisher, Gerald T. A survey of the St. Paul public school system's drafting teachers regarding the junior high drafting program. Hazel Park Junior High School, St. Paul, Minnesota. Completed: 1966. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Flugstad, David M. The relationship between achievement in high school engineering drawing and grades in freshman engineering drawing courses. Completed: 1966. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Gohl, Art. The relationship of size and design of the handsaw to the stature of students in the seventh grade. Completed: 1966. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Hahn, Marshall. The influence of creativity on the effectiveness of two methods of instruction. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Hoverson, Burton R. An evaluation of the open house as an effective public relations technique for industrial arts teachers at the junior high level. Highland Park Junior High School, St. Paul, Minnesota. Completed: 1967. To fulfill M. A. degree requirements, University of Minnesota.

Johnson, Dean. Appraisal of industrial arts needs at Buffalo High School. Buffalo Junior-Senior High School, Buffalo, Minnesota. Completed: 1966. M. A. thesis.

Johnson, Howard L. An evaluation of selected enamel finishes appropriate for use in an industrial arts program. Completed: 1965. To fulfill M. A. degree requirements, Department of Industrial Education. University of Minnesota, Minneapolis, Minnesota.

Kitto, Thomas A. An experimental study of the relative efficiency of teaching drafting on three different media: the T-square, parallel rule, and drafting machine. Central High School, 3416 Fourth Avenue South, Minneapolis, Minnesota. In progress. To fulfill M. A. degree requirements, University of Minnesota.

Larson, Jerome D. An approach to teaching low temperature casting on the junior high school level. Completed: 1965. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Montzka, Harold L. The construction and evaluation of a linear program on basic oscillators. Completed: 1966. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Moss, Jerome, Jr. The influence of industrial arts experience on grades earned in post-high school trade and technical curriculums. Minnesota Research Coordination Unit in Occupational Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: United States Office of Education.

Nelson, Howard F. and Pucel, David. A study of basic competencies and characteristics useful to the process of selecting and admitting student-trainees to the full-time day trade courses given in the twenty-four Area Vocational-Technical Schools in Minnesota. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. In progress. Source of support: United States Office of Education.

Nelson, Orville William. A framework for research in industrial arts motor learning. Completed: 1967. Ph. D. dissertation, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Nelson, Wayne R. The selection of the most important reason for taking industrial arts at Edison High School, Minneapolis, Minnesota in the school year 1964-65. Completed: 1965. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Pratzner, Frank. An investigation of the effectiveness of an auto instructional program for teaching selected concepts and manipulative techniques of drafting to beginning industrial arts students. Completed: 1965. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Pucel, David. The relative effectiveness of the traditional and two modified methods of organizing information sheets in industrial education. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Ph. D. dissertation. Source of support: United States Office of Education.

Rabens, Gordon W. Wayzata Senior High School industrial arts: a study of the expansion needs and possibilities. Completed: 1966. To fulfill M. A. degree requirements. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Rahn, L. E. and Magnuson, E. V. Student laboratory manual for senior high school electricity. Completed: 1966. To fulfill M. A. degree requirements. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Renner, Robert A. The development and analysis of a visual-manual-graphical method of instruction for fluid power symbology. Vocational-Technical School, Mankato, Minnesota. Completed: 1966. M. A. thesis, Mankato State College, Mankato, Minnesota.

Rivers, George T. Electricity-electronics for the White Bear Lake secondary schools. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. To fulfill M. A. degree requirements.

Sanders, Wayne Edward. An experiment for and the comparison of the withdrawal strength of various fastening devices in five different woods. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. To fulfill M. A. degree requirements.

St. Claire, Bernard. A follow-up study of Stillwater, Minnesota high school graduates 1962-65 who had enrolled in industrial arts. Completed: 1966. To fulfill M. A. degree requirements. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Steele, Gerald Lee. A comparison of plastics concepts learned using educational toys and three dimensional mock-ups and concepts learned using commercial processing equipment. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1967. Ph. D. dissertation.

Tank, Frank. Contact printing relative to a course in offset photography. St. Cloud Area Vocational School, St. Cloud, Minnesota. Completed: 1966. To fulfill M. A. degree requirements.

White, Richard M. A survey of the graduates of Austin High School electronics classes to determine the use made of electronics courses taken in high school. Austin High School, Austin, Minnesota. In progress. Expected completion date: 1967.

INDUSTRIAL MANAGEMENT AND INDUSTRIAL RELATIONS

Dawis, R. V. and Zingale, P. Validation studies of the manipulator-accommodator scale. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. In progress.

Dicson, Gary W. An analysis of the nature and use of management information systems in the control process. Department of Management, Production and Transportation, University of Minnesota, Minneapolis, Minnesota. Completed: 1966.

Dunnette, M. D., Hakel, M. D., Dobmeyer T., Hollmann, T., and Ohnesorge, J. Interpersonal perception and behavior prediction in the employment interview. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. In progress.

Dunnette, M. D. Johnson, J., and Knapp, B. Vocational interests, scientific creativity, and managerial effectiveness. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. In progress. Source of support: Richardson Foundation.

England, George W. Managerial values. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: Ford Foundation.

England, G. W., Foss, R. J., Keaveny, T. J., Guthman, M. A., and McGovern E. Personal values and managerial behavior. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. In progress.

Heneman, Herbert G. Jr. Occupational forecasting. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: Department of Industrial Relations.

Holloway, Robert J. Accentuation of consumer perception. Department of Marketing and Business Law, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Sources of support: Graduate School, University of Minnesota, and Hill Family Foundation.

Mahoney, Thomas A., et. al. Criteria of organization effectiveness. Department of Industrial Relations, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: Department of Industrial Relations.

Schmitt, C. F. International correspondence schools. Northern States Power Company, 4741 Nicollet Ave., Minneapolis, Minnesota. Completed: 1967.

Solem, Allen. The role of the employment interview in assessing needs. Department of Management, Production and Transportation, University of Minnesota, Minneapolis, Minnesota. Completed: 1966.

Weitzel, William. Some determinants of performance evaluation. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. In progress.

OCCUPATIONAL CURRICULUMS, PROGRAMS, INSTRUCTIONAL MATERIALS AND METHODS

Anderson, D. Thomas. Developmental and remedial reading programs for adult vocational schools. Aurora-Hoyt Lakes Junior-Senior High School, Aurora, Minnesota. In progress. To fulfill M. A. degree requirements.

Andres, Katherine. Data Processing: What should be taught in high school to give students a proper background for understanding automation and data processing. Esko High School, Esko, Minnesota. Completed: 1966.

Backstrom, Robert G. An investigation of the effectiveness of a training device for teaching selected concepts of digital computers. Completed: 1966. To fulfill M.A. degree requirements. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Bukstein, Edward J. "Alpha-Com" (computer-assisted instruction). Northwestern TV and Electronics Institute, 3100 - 38th Avenue South, Minneapolis, Minnesota. Completed: 1965. Source of Support: Northwestern TV and Electronics Institute.

Carlson, J. G. Curriculum study. South Junior High School, St. Cloud, Minnesota. In progress.

Chadwick, Al. A new approach to teaching graphic arts. Hopkins High School, 1001 Highway 7, Hopkins, Minnesota. In progress. Expected completion date: 1967. Source of support: Independent School District #274

Cherrier, Lynn F. The role of audio-visual equipment at the University of Minnesota: an appraisal of its use in instruction. Completed 1965. To fulfill M.A. degree requirements. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Doty, Lewis. A resource unit on automotive styling and design. Dodge Center High School, Dodge Center, Minnesota. Completed: 1966.

Faunce, R. W. and Murton, Bonnie. Short term evaluation of an experimental junior high school focusing on practical curricula for non-college bound youth. School Rehabilitation Center, Sixth Street & Chicago Avenue, Minneapolis, Minnesota. In progress. Source of support: Office of Economic Opportunity.

Fisher, Gerald J. A survey of the St. Paul Public School System's drafting teachers regarding the junior high drafting program. Hazel Park Junior High School, St. Paul, Minnesota. Completed: 1966. To fulfill M.A. degree requirements, Department of Industrial Education, University of Minnesota.

Ford, Roxana R. Exploratory studies: reaching adults with homemaking education. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota. Completed: 1966.

Haakenson, Harvey M. A resource unit of automotive instructional materials available from related industries. Pine City Area Vocational Schools, Pine City, Minnesota. In progress. To fulfill Master's degree requirements at Stout State University, Menomonie, Wisconsin.

Hastie, W. Reid. A study of the basic working assumptions concerning learning and instructional practices in the visual arts at the elementary school level. Department of Art Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966

Hemsey, William. An analysis of the trade extension evening program at the Duluth Area Vocational-Technical School. Duluth Area Vocational School, Duluth, Minnesota. Completed: 1966.

Hendrix, Vernon L. Environmental influences on occupational programs of public junior colleges. Department of Educational Administration, University of Minnesota. In progress. Expected completion date: 1969

Horn, Fern. Appraisal of curriculum materials for use by secondary home economics teachers. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota; also Vocational Education Section, State Department of Education, St. Paul, Minnesota. Completed: 1966. Sources of support: United States Office of Education and Minnesota State Department of Education.

Kinning, Darrell R. An experimental study of the relative effectiveness of educational films versus individual visits in learning about industry. Completed: 1965. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Korpi, Robert W. Photography curriculum in teacher training institutions. Murray Junior-Senior High School, St. Paul, Minnesota. In progress. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Sanstead, John L. A survey of the ninth grade occupational information unit taught in Minnesota public schools. Hastings Junior-Senior High School, Hastings, Minnesota. Completed: 1966. Source of support: Guidance Unit, State Department of Education.

Skoog, Emery L. Mathematics for technology: an arithmetic textbook for students in trade and technical education. Completed: 1966. To fulfill M. A. degree requirements, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota.

Schmitt, C. F. St. Paul Technical and Vocational Institute. Northern States Power Company, Minneapolis, Minnesota. In progress. Purpose of the study: To determine appropriate units of vocational and technical instruction encompassing approximately twelve vocational and technical classifications of work.

Waage, Wesley A. A preliminary proposal for the establishment of an associate degree program to prepare para-professional positions as instructional aides to assist elementary and secondary classroom instructors. Fergus Falls State Junior College, Fergus Falls, Minnesota. In progress. Expected completion date: 1967. Source of support: Upper Midwest Regional Laboratory.

Wakefield, James C. Development of a post high school vocational machine shop safety program. St. Cloud Area Vocational School, St. Cloud, Minnesota. Status: Approval obtained.

OCCUPATIONAL SURVEY

Manpower Needs, Entry Occupations and Training Requirements

Gastler, R. Wage rises in selected industries - Cityof Duluth, 1946-1966. Denfeld Senior High School, Duluth, Minnesota. Completed: 1965.

Gross, Edward. Trends in sexual segregation in occupations. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. In progress. Expected date of completion: 1967.

Kidneigh, John C. & Walz, Thomas. B. A. level education and social welfare manpower. School of Social Work, University of Minnesota, Minneapolis, Minnesota. In progress. Expected date of completion: 1969.

Lodge, D. E. Vocational training requirements in Saint Paul. North Star Research and Development Institute, 3100-38th Avenue South, Minneapolis, Minnesota. Completed: 1966. Source of support: St. Paul Board of Education.

Lydeen, Jerald B. Survey of entry occupations of the Thief River Falls Area Vocational-Technical School graduates from 1961 to 1965. Area Vocational School, Thief River Falls, Minnesota. In progress.

Macemon, Warren E. Development of a vocational-technical training center, Hutchinson, Minnesota. Special School District #423, Hutchinson, Minnesota. In progress. Expected completion date: 1968. Source of support: Special School District #423.

Minnesota Department of Employment Security. Health services survey (a survey of employers to determine the expected demand and supply in 1968 and 1971 for 22 occupations). 369 Cedar Street, St. Paul, Minnesota. Expected completion date: 1967.

Minnesota Department of Employment Security. Occupational outlook (the Minneapolis-St. Paul Metropolitan area). Completed: 1966.

Muskat, Raymond. Part-time jobs survey. Woodland Junior High School, Duluth, Minnesota 55818. In progress.

Richter, G. Survey of trade needs for the St. Paul Technical-Vocational Institute. St. Paul Vocational-Technical Institute, St. Paul, Minnesota 55101. In progress. Source of support: Hill Foundation.

Roswold, Myron. Jobs available in our community. Grand Rapids High School, Grand Rapids, Minnesota. Expected completion date: 1967. To fulfill M. A. degree requirements, Department of Business Education, University of Minnesota, Minneapolis, Minnesota.

Workers' Attitudes, Abilities, Adjustments, and Satisfaction

Dawis, Rene V. Ability factors survey. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: Department of Industrial Relations, University of Minnesota.

Dawis, Rene V. Aptitudes project. Completed: 1966. Source of support: Graduate School, University of Minnesota.

Dawis, Rene V. Employee attitudes. Completed: 1966. Source of support: Department of Industrial Relations, University of Minnesota.

Dawis, Rene V. Threshold worker attitudes project. Completed: 1966. Source of support: Vocational Rehabilitation Administration.

England, George W., Lofquist L., Dawis, R. V., Weiss D. and others. Work Adjustment project. In progress. Source of support: Vocational Rehabilitation Administration. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota.

Heneman, H. G., Dawis, R. V., Graen, G., and Jensen, J. Threshold worker project. In progress. Source of support: United States Department of Labor. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota.

Higbee, Walter R. Social comparison processes among mentally retarded adults in a sheltered workshop. Completed: 1965. Ph. D. dissertation, Department of Special Education, College of Education, University of Minnesota, Minneapolis, Minnesota.

Falk, Laurence L. (Concordia College, Moorhead, Minnesota). "Occupational satisfaction of female college graduates." Journal of Marriage and the Family, Vol. 28, May 1966, pp. 177-195.

Mahoney, Thomas A. Exploratory study of workers' reactions to relocation. Department of Industrial Relations, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: United States Department of Labor.

Rossmann, J. E., and Campbell, D. F. (Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota). "Why college-trained mothers work." Personnel Guidance Journal, 1965, 43, 987-992.

Stedman, Louise A. (School of Home Economics, University of Minnesota, St. Paul, Minnesota). "Employer acceptance of the mature home economist." Journal of Home Economics, December 1965, Vol. 57, Number 10, 767-772. Source of support: Sears Roebuck Foundation.

Siegel, William. Differential effects of six functional disabilities across occupational groupings. Department of Educational Psychology, University of Minnesota, Minneapolis, Minnesota. Completed: 1965. Ph. D. dissertation.

VOCATIONAL EDUCATION

Objectives, Philosophy, Policies, and Problems

Brown, Marjorie M. The meaning of home economics: an examination of the presuppositions upon which home economics is based. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota. Completed: 1966. Source of support: Graduate School Research Center, University of Minnesota.

Gross, Edward and Dashefsky, Arnold. The definition of the purposes of Youth Opportunity Centers by staff and clients. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. Completed: 1967.

Halvin, Lloyd. Federal aid and a philosophy of vocational education. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1965. To fulfill M. A. degree requirements.

Keller, R., Corcoran, M., Domian, O., Hooker, C., Moss, J., Jr., and Swanson, G. Education and economic growth, the next steps. Upper Midwest Research and Development Council, 950 Federal Reserve Bank Building, Minneapolis, Minnesota. Completed: 1965. Sources of support: Upper Midwest Research and Development Council and the University of Minnesota.

Kittleson, Howard. Economic commitment to vocational education and nature of programs. In progress. To fulfill Ph. D. degree requirements, Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota.

Minnesota Research Coordination Unit in Occupational Education staff. Cognitive objectives of vocational-technical education. Minnesota Research Coordination Unit in Occupational Education, University of Minnesota, Minneapolis, Minnesota. In progress.

Nelson, C. L. Source and extent of economic commitment to public vocational education in Minnesota and their effect on the nature of training opportunities. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. Completed: 1966. Source of support: University of Minnesota.

Persons, Edgar A. Education and income. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Randleman, Robert. Planning for a cooperative, regionwide study in occupational education. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. In progress. Source of support: Upper Midwest Regional Laboratory.

Taylor, Lydell. Number of percentages of accepted graduates to the various area vocational schools. Buffalo High School, Buffalo, Minnesota. Completed: 1965.

Twin Cities Metropolitan Planning Commission Staff. Developmental policies for public supported colleges and special education facilities and services in the metropolitan area. Twin Cities Metropolitan Planning Commission, Griggs-Midway Building, St. Paul, Minnesota. In progress. Expected completion date: 1968. Source of support: United States Department of Housing and Urban Development.

Twin Cities Metropolitan Planning Commission Staff. Higher education study (in part to determine the role of junior colleges, state colleges, university system and technical schools in providing services to local populations). In progress. Expected completion date: 1968. Source of support: Metropolitan Planning Commission.

Occupational Education Research

Bailey, Willard F., Jr., and Moss, Jerome, Jr. A comparison of mail-techniques for stimulating interest in occupational education research. Minnesota Research Coordination Unit in Occupational Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966.

Pucel, David J., Smith, Brandon B., Hahn, Marshall S., and Bailey, Willard F., Jr. Estimating the human resources for research in occupational education in Minnesota. Minnesota Research Coordination Unit in Occupational Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1966.

Teacher Education

Alfonso, Laurencia. The relationship of authoritarian conceptual functioning and elements of simplicity-complexity in thinking among student teachers. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota. In progress. To fulfill M. A. degree requirements.

Anderson, Patricia Hall. Conceptual organization and response style. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota. In progress. To fulfill M. A. degree requirements.

Brown, Marjorie M. Conceptual structure and evaluation of student teachers. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota. In progress. Expected completion date: 1967-68. Source of support: Department of Home Economics.

Brown, Marjorie M. Conceptual structure, self-perception and concept of teaching. In progress. Source of support: Department of Home Economics Education.

Brown, Marjorie M. Response styles of people with different conceptual systems. In progress. Source of support: Department of Home Economics Education.

Hart, Sister Maxine. Dogmatism as a factor in perception of pupils among student teachers. Completed: 1966. Ph. D. dissertation. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota.

Hickner, Marybelle. Personality organization of supervising teachers and evaluation of student teachers. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Kluckman, Delores. Authoritarianism and conceptual organization and preference for grading system. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota. In progress. To fulfill M. A. degree requirements.

Murphy, Patricia D. Simplicity-complexity in thinking as related to preference for dependence-independence in students. Completed: 1967. Master's paper, Plan B, Department of Home Economics, University of Minnesota, St. Paul, Minnesota.

Restad, Lou Ann. Conceptual organization of student teachers and direction of discovery learning in pupils. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota. In progress. To fulfill M. A. degree requirements.

VOCATIONAL GUIDANCE AND COUNSELING

Academic, Personal, and Social Characteristics and Problems of Students and Dropouts

Anderson, Gerald. Low self-concept scores and high discrepancy scores as identifying characteristics of school dropouts. Central High School, Duluth, Minnesota. Completed: 1965.

Anderson, Wayne J. High school dropouts in Minnesota: Implications for Education. General College, University of Minnesota, Minneapolis, Minnesota. Status: Completed. Sources of support: Minnesota Council on Family Life; Graduate School Research Center, University of Minnesota.

Barrett, Roger. The influence of self-regard on changes in self-estimates following reporting of test results. Student Personnel Office, University of Minnesota, Minneapolis, Minnesota. In progress. To fulfill Ph. D. degree requirements.

Berdie, Ralph F. A study of intra-individual differences. Office of the Dean of Students, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1967. Source of support: United States Office of Education.

Bock, Gordon. Group work with seven male potential dropouts. North Branch High School, North Branch, Minnesota. In progress.

Boyd, Robert E. Cross Cultural comparison of value systems, inner city-suburban, of selected high school populations. Richfield Senior High School, Richfield, Minnesota. In progress.

Brader, Don. Socio-economic status, place of residence, and parental expectations. Chaska High School, Chaska, Minnesota. In progress.

Brough, James. The junior high schooler: his concerns and sources of help. (Edina High School, Edina, Minnesota). Published in The School Counselor, December, 1965.

Brown, Marjorie M. Conceptual structure of students and reaction to types of academic experiences. Department of Home Economics Education, University of Minnesota, St. Paul, Minnesota. In progress. Source of support: Department of Home Economics Education.

Campbell, D. P. "A cross-sectional and longitudinal study of scholastic abilities over twenty-five years." (Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota). J. Counsel. Psychol., 1965, 55-61.

Christenson, Jeffery. A project to identify potential dropouts currently enrolled in grades 9-12 and an intensive study of each individual. Mahtomedi Public School District #832, Mahtomedi Public Schools, Mahtomedi, Minnesota. Proposal submitted.

Demars, Joseph M. The degree of educational deprivation in School District #542. Battle Lake High School, Battle Lake, Minnesota. In progress.

Edson, Kenneth Charles. Factors related to changes in environmental expectations of college freshmen. Completed: 1965. Ph. D. dissertation, Department of Educational Psychology, University of Minnesota, Minneapolis, Minnesota.

Falk, Lawrence L. A comparative study of problems of married and single students. Concordia College, Moorhead, Minnesota. Completed: 1966. Source of support: Dean's Office, Concordia College.

Falk, Lawrence L. Continuation of a comparison of married and single students. In progress. Expected completion date: 1968.

Flugstad, David M. The relationship between achievement in high school engineering drawing and grades in freshman engineering drawing courses. Washburn High School, Minneapolis, Minnesota. Completed: 1966.

Grimes, Donald A. A study of the effects of the application of Dr. Delecato's neuro-psychological theory upon mentally retarded students. Rosemount Junior High School, Rosemount, Minnesota. In progress. Expected completion date: 1967. Sourcesof support: Independent School District #196, Rosemount, Minnesota and Bureau of Research, Washington, D. C.

Grimes, Donald A. Relationship of occupational status, social class, and educational attainment of parents of junior high school students who attain the honor roll and those who fail. Completed: 1965.

Kreul, William. A study of the dropouts at Sauk Rapids High School, 1958-1964. Sauk Rapids High School, Sauk Rapids, Minnesota. Completed: 1965.

MacDonald, John. A study of dropouts - net loss in grades 9-12. Aitkin High School, Aitkin, Minnesota. In progress.

McMillion, Martin B. A study in communication between high school teachers of vocational agriculture and socio-economically disadvantaged youth by the use of the semantic differential. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. Completed: 1966. Source of support: United States Office of Education.

Mueller, Charlotte. Socio-economic data for 301 members of the class of 1971 of Maplewood Junior High School. Maplewood Junior High School, North St. Paul, Minnesota. Completed: 1966.

Mueller, Charlotte. Some facets of the out-of-school life of 298 seventh graders of the class of 1971. Completed: 1965.

Musburger, Jerry. A controlled study to determine to what extent students actually read the type of books for which they express a preference. Frazee Junior-Senior High School, Frazee, Minnesota. In progress. For M. S. degree.

Nelson, John R. A comparative investigation between creativity and intelligence as they relate to a rating of cooperation. Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. Completed: 1965. To fulfill M. A. degree requirements.

Nichols, Marilyn L. A comparison of students in pre-engineering and engineering technology: a study into the feasibility of differential entrance requirements. Rochester Junior College, Rochester, Minnesota. In progress. Expected completion date: 1967.

Counseling and Guidance Services

Bollum, James E. The utility of the guidance services at Alden High School to post high school education-vocational satisfaction. Alden High School, Alden, Minnesota 56009. Completed: 1966.

Brough, James (Edina High School, Edina, Minnesota). "Sources of student perceptions of the role of the counselor." Personnel and Guidance Journal, February, 1965.

Campbell, D. P. (Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota). "Achievements of counseled and non-counseled students twenty-five years after counseling." J. Counsel. Psychol., 1965, 12: 287-293.

Campbell, D. P. The results of counseling: twenty-five years later. Philadelphia: W. B. Saunders, 1965.

Carlson, J. G. Scheduling study. South Junior High School, St. Cloud, Minnesota. In progress.

Hower, Vivian H. Evaluation of group and individual counseling. Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: Student Counseling Bureau.

Holgate, John R. Summer occupational guidance with family and personal guidance with individual students. Lake Crystal High School, Lake Crystal, Minnesota 56055. In progress.

Hughes, Jerome. Use of counseling services by high school students in regard to areas and time in counseling. Johnson High School, St. Paul, Minnesota 55106. In progress.

Lundgren, M. H. Role of the counselor in selected Minnesota schools. Staples Junior-Senior High School, Staples, Minnesota. Completed: 1965. Source of support: Bemidji State College. For M. S. degree at Bemidji State College.

Maine, Harold and Anderson, Basil. An evaluation of developmental counseling with groups of low achievers in a junior high school setting. Robbinsdale High School, Robbinsdale, Minnesota. In progress. Expected completion date: 1967.

Pinney, Catherine. A study involving (1) reality and early planning, (2) curriculum evaluation in light of students' past high school experiences, (3) predictive value of tests, and (4) family pattern. Mankato Senior High School, Mankato, Minnesota. In progress.

Stein, Carroll. A test of basic assumptions used in vocational rehabilitation counseling. 3517 Humboldt South, Minneapolis, Minnesota. Completed: 1966. Ph. D. dissertation, Department of Educational Psychology, University of Minnesota.

Tamminen, Armas. Relationship between high school guidance programs and student behavioral outcomes. Guidance Unit, Vocational Education Section, State Department of Education, St. Paul, Minnesota. In progress. Expected completion date: 1967. Source of support: United States Office of Education.

Watley, Donivan J. A reanalysis of the clinical-statistical controversy and its relevance to counseling. Student Counseling Bureau, Office of the Dean of Students, University of Minnesota, Minneapolis, Minnesota. In progress. Source of support: Student Counseling Bureau.

Watley, Donivan J. Clinical prediction in counseling. In progress. Source of support: Student Counseling Bureau.

Watley, Donivan J. The accuracy of counselor's predictions for their clients. In progress. Source of support: Student Counseling Bureau.

Watley, Donivan J. The conselor's cognitive processes in diagnosis and prediction. In progress. Expected completion date: 1967. Source of support: Graduate School, University of Minnesota.

Watley, Donivan J. Levels of counselor predictive skill and differential judgments of occupational suitability. Completed: 1966. Source of support: Student Counseling Bureau.

Watley, Donivan J. Training counselors to improve their predictive ability. In progress. Source of support: Student Counseling Bureau.

Watley, Donivan J. Counseling philosophy and counselor predictive skill. Completed: 1966. Source of support: Student Counseling Bureau.

Welch, William and Hoefer, Barbara. Pilot study: group counseling with potential dropouts at the ninth grade level, using the Youth Opportunity Center. Central Junior High School, White Bear Lake, Minnesota. Completed: 1966.

Follow-up Studies of Graduates

Albrechsten, Glen. Follow-up study of all graduates. Burnsville High School, Savage, Minnesota. In progress.

Babcock, Francis. Five years after graduation - a follow-up study (Class of 1960). Mound Senior High School, Mound, Minnesota. Completed: 1966.

Bergstrom, Howard E. Job experience of young men graduated from high school. Educational Research and Development Council of the Twin Cities Metropolitan Area, College of Education, University of Minnesota, Minneapolis, Minnesota. Status: In progress. Source of support: Office of Manpower, Automation and Training.

Campbell, D. P. A study of college freshmen -- twenty-five years later. Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota. Completed: 1965. Source of support: United States Office of Education, (Cooperative Research Project No. 2160).

Donofrio, J. Follow-up study of Denfeld graduates 1953-1963. Denfeld Senior High School, Duluth, Minnesota. Completed: 1966.

Esterberg, Warner E. A follow-up study of the former students of Cotton High School. Cotton High School, Cotton, Minnesota. Completed: 1965. For M. A. degree, University of Minnesota at Duluth.

Fahey, Robert. A survey of strengths and weaknesses of high school graduates employed in the Minneapolis-St. Paul, Minnesota area. Winona State College, Winona, Minnesota. Completed: 1966. Master's thesis.

Fuhrman, William. Follow-up survey of the Litchfield High School graduates of 1964. Litchfield High School, Litchfield, Minnesota. Completed: 1966.

Gibson, Francis. Follow-up study of graduates of 1963-64-65. Twin Valley High School, Twin Valley, Minnesota 56584. In progress.

Hageman, Richard. Follow-up studies. Prior Lake High School, Prior Lake, Minnesota. In progress.

Hasselfeldt, Nick. A follow-up study of the 1960 Staples High School graduates. Staples High School, Staples, Minnesota. Completed: 1966.

Hofland, Carl J. A follow-up study of high school graduates 1957-1965. Esko High School, Esko, Minnesota. In progress.

Ingwell, Paul E. Follow-up of all graduates. St. Cloud State College, St. Cloud, Minnesota. In progress (a continuing study brought up to date on yearly basis). Source of support: St. Cloud State College.

Kasma, Clinton. A follow-up study of the 1958 and 1962 graduates of Little Falls Senior High School. Hopkins Public Schools, Hopkins, Minnesota. Completed: 1966. For Master of Arts degree.

Koepsell, Douglas. Follow-up studies of graduates of Cambridge High School. Cambridge High School, Cambridge, Minnesota. Completed: 1965.

Larson, Roland. Follow-up study of 1964 St. Louis Park graduates. St. Louis Park Public Schools, St. Louis Park, Minnesota. Completed: 1966. Source of support: Local School District.

Michalko, William. Follow-up study of senior high electives chosen in the ninth grade. St. Cloud State College, St. Cloud, Minnesota. In progress. Expected completion date: 1967.

Minelli, Phil. A follow-up survey of 1965 high school graduates. Granite Falls High School, Granite Falls, Minnesota 56241. Completed: 1965.

Roswold, Myron. A follow-up study of the business graduates from Grand Rapids High School. Grand Rapids High School, Grand Rapids, Minnesota. In progress. Expected completion date: 1967. To fulfill M. A. degree requirements, Department of Business Education, University of Minnesota.

Stenerson, Roger. What happens to Glyndon High graduates. Glyndon High School, Glyndon, Minnesota. Completed: 1966.

Varney, Margaret. Success of Mounds View High School graduates in various colleges in Minnesota. Mounds View High School, St. Paul, Minnesota. In progress (an ongoing evaluation).

Wright, Dale E. Follow-up study 1966-67. Willmar Junior College, Willmar, Minnesota. In progress.

Measurement, Evaluation, and Prediction

Brough, James R. The attitudes of the ninth grade students towards the purpose of the Kuder Preference Record. Edina High School, Edina, Minnesota. In progress.

Canon, Harold Lee. Personality characteristics and other factors as predictors of achievement in college. Completed: 1965. Ph. D. dissertations, College of Education, University of Minnesota, Minneapolis, Minnesota.

Dunnette, M. D., Campbell, J. P., Opsahl, R., Johnson, P., and Gibson, D. Development and evaluation of a measure of empathy. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. Completed: 1967.

Edin, Stawley A. The predictive value of certain high school backgrounds, the D.A.T and the G.A.T.B. success in a post high school vocational machine shop program. Staples Area Vocational School, Staples, Minnesota 56479. In progress. Expected completion date: 1968.

Gibson, Francis. The use of the D.A.T. VR plus NA total as a predictor of high school and college success. Twin Valley High School, Twin Valley, Minnesota. In progress.

Johnson, James L. Prediction of academic success in high school by teacher ratings. Benson Senior High School, Benson, Minnesota 56215. In progress.

Joslyn, Gary. Survey testing programs in Minnesota schools K-12. Guidance Unit, Vocational Education Section, State Department of Education, St. Paul, Minnesota. In progress. Expected completion date: 1967. Source of support: NDEA-V-A.

Kinion, Wayne. A study of the college preparatory course in high school as a predictor of academic success in college. Edina-Morningside High School, Edina, Minnesota. Completed: 1965.

Koenig, Jerome. The predictive power of our testing programs, grades 7-12. Osseo Senior High School, Osseo, Minnesota 55369.

Koenig, Jerome (with cooperation of Student Counseling Bureau, University of Minnesota). The prediction of final seventh year school grades from ITBS and Lorge-Thorndike scores. Osseo Senior High School, Osseo, Minnesota. Completed: 1965.

Mueller, Phillip. Using the ITED numeric grid to collect information about student plans and other test data. Centennial Senior High School, Circle Pines, Minnesota 55014. Completed: 1965.

Nelson, C. L. Graduate student success as predicted by College of Education Test Battery for agricultural education. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. Completed: 1966. Source of support: University of Minnesota.

Peterson, Milo J. Graduate test battery scores and academic success. Department of Agricultural Education, University of Minnesota, St. Paul, Minnesota. Completed: 1966. Source of support: Department of Agricultural Education.

Renshler, A. V. Prediction table for academic achievement for incoming seventh grade students to the junior high school. Franklin Junior High School, Brainerd, Minnesota. Completed: 1965.

Robertson, James. Moderate variables: a new model. Student Counseling Bureau, Office of the Dean of Students, University of Minnesota, Minneapolis, Minnesota. In progress. Source of support: Student Counseling Bureau.

Stillwell, Douglas. A study of some relationships between the DAT scores and course marks of students in the Elk River Public Schools. Elk River High School, Elk River, Minnesota. Completed: 1966.

Watley, Donivan. A prediction task and counselor attempts to cognitively build case models. Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: Student Counseling Bureau.

Occupational Choice and Occupational Information

Brough, James R. Changes in self-perception, occupational choice, and occupational information as a result of classroom instruction. Edina High School, Edina, Minnesota. Completed: 1966.

Campbell, D. P. and Johansson, C. B. (Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota). "Academic interests, scholastic achievements, and eventual occupations." J. Counsel. Psychol., 1966, 13, No. 4, 416-424.

Dauw, Dean Charles. Life experiences, vocational needs and choices of original thinkers and good elaborators. Completed: 1965. Ph. D. dissertation, Department of Educational Psychology, University of Minnesota, Minneapolis, Minnesota.

Faunce, R. W. and Murton, Bonnie J. Occupational knowledge of disadvantaged elementary school children. School Rehabilitation Center, Sixth Street and Chicago Avenue, Minneapolis, Minnesota. In progress.

Fenske, Robert H. The amorphous ones: youth who select vocational-technical post-high school education. Bureau of Institutional Research, University of Minnesota, Minneapolis, Minnesota. Completed: 1966.

Hanna, Charles. The effect of a vocational unit on vocational choice of selected students. University of Minnesota at Morris, Minnesota. In progress.

Hewer, Vivian H. Evaluation of a criterion: realism, a vocational choice. Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota. Completed: 1966.

Jiloca, Editha L. The relative influence of vocational needs, occupational preferences, and occupational perceptions on the occupational aspirations and expectations of high school students. Minnesota Research Coordination Unit in Occupational Education, Department of Industrial Education, University of Minnesota, Minneapolis, Minnesota. In progress.

Montgomery, Ruth B. The relationship between 5th and 6th grade students' occupational aspirations and their scholastic achievement, ability level, and fathers' occupations. Edina High School, Edina, Minnesota. In progress. Expected completion date: September 1967.

Seeling, Kenneth D. Reasons for vocational choice and change among high school students. Dawson High School, Dawson, Minnesota. Completed: 1966.

Torrance, E. Paul. Developmental studies of career aspirations of children. Department of Educational Psychology, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: United States Office of Education.

Turner, Evelyn. Post high school selections of our high school graduates (5 years). Moorhead Senior High School, Moorhead, Minnesota. Completed: 1965.

Watley, Donivan J. and Campbell, D. P. A follow-up of occupational choice predictions made by counselors 25 years ago. Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota. In progress. Source of support: Student Counseling Bureau.

Zacha, James. A study of ninth grade students' indicated vocational choice and subsequent changes in vocational choice.

Vocational Interests and Preferences

Campbell, D. P. (Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota). "A comparison of the performances of four SVIB scoring services." J. Educ. Measmt., 1965, 2: 218-219.

Campbell, D. P. Manual for the Strong Vocational Interest Blanks for men and women. Stanford University Press, 1966.

Campbell, D. P. "Review of the Fowler-Parmenter Self-Scoring Interest Record." Mental Measurements Yearbook, 1965, 1053.

Campbell, D. P. "Stability of interests within an occupation over thirty years." J. Appl. Psychol., 1966, 50: 51-56.

Campbell, D. P. "The stability of vocational interests within occupations over long time spans." Personnel Guid. J., 1966, 44, No. 10: 1012-1019.

Campbell, D. P. "The vocational interests of APA presidents." Amer. Psychol., 1965, 20: 636-644.

Campbell, D. P. "Occuaptions ten years later of high school seniors with high scores on the SVIB Life Insurance Salesman Scale." J. Appl. Psychol., 1966, 50, No. 5: 369-372.

Campbell, D. P. and Schuell, Hildred. "Vocational interests of women in speech pathology and audiology." ASHA, 1966 (in press).

Campbell, D. P. "Work satisfaction and scores on a picture interest inventory." J. Appl. Psychol., 1965, 49: 74-75.

Clark, K. E. and Campbell, D. P. Manual for the Minnesota Vocational Interest Inventory. New York: Psychological Corporation, 1965.

Harmon, Lenore A. W. The measurement of women's interests: the effect of using married women as occupational criterion groups on the Women's Strong Vocational Interest Blank. Completed: 1965. Ph. D. dissertation, Department of Psychology, University of Minnesota, Minneapolis, Minnesota.

Haugan, August. The relationship between preference for an activity and familiarity with that activity. Alexander Ramsey High School, St. Paul, Minnesota 56113. In progress.

Kidneigh, John C. Interests of highly ranked graduates (MSW) from schools of social work in the United States and Canada in advanced professional education. School of Social Work, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1970. Source of support: University of Minnesota.

Nolting, Earl. The development of women's vocational interests: pre-college and post-graduation. Office of the Dean of Students, University of Minnesota, Minneapolis, Minnesota. In progress. Partially supported by Graduate School grant.

Rossman, J. E. and Campbell, D. P. Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota. "Vocational interests of employed and non-employed mothers." Bull. Fam. Develpm., 1965, 5: 1-8.

Scheltzer, Vera M. Changing and stable vocational interests: six professional groups tested as high school seniors and again after entry into a profession. Office of the Dean of Students, University of Minnesota, Minneapolis, Minnesota. Completed: 1966. Source of support: Student Counseling Bureau.

Scheltzer, Vera M. SVIB as a predictor of job satisfaction. Completed: 1966. Source of support: Student Counseling Bureau.

Scheltzer, Vera M. Vocational interests of evening class students obtaining the basic engineering science certificate. In progress. Source of support: General Extension Division.

Taylor, Ronald G. and Hecker, D. L. Interest and ability pattern comparisons of successful and unsuccessful male college students in technical and associate degree programs. Office of the Dean of Students, University of Minnesota, Minneapolis, Minnesota. In progress. Expected completion date: 1967. Source of support: United States Office of Education.

Thorpe, R. P. and Campbell, D. P. (Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota.) "Expressed interests and worker satisfaction." Personnel Guid., J., 1965, 43: 238-243.

Watley, Donivan J. Differential academic experiences in engineering in relation to the permanence of measured interests. Student Counseling Bureau, University of Minnesota, Minneapolis, Minnesota. In progress. Source of support: Student Counseling Bureau.